CRPL-F118

FOR OFFICIAL USE

IONOSPHERIC DATA

ISSUED
JUNE 1954

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number									
	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945
December		15	33	53	86	108	114	126	85	38
November		16	38	52	87	112	115	124	83	36
October		17	43	52	90	114	116	119	81	23
September		18	46	54	91	115	117	121	79	22
August		18	49	57	96	111	123	122	77	20
July		20	51	60	101	108	125	116	73	
June		21	52	63	103	108	129	112	67	
May	10	22	52	68	102	108	130	109	67	
April	10	24	52	74	101	109	133	107	62	
March	11	27	52	78	103	111	133	105	51	
February	12	29	51	82	103	113	133	90	46	
January	14	30	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

University of Graz:
Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Leopoldville, Belgian Congo

University of Sao Paulo:
Sao Paulo, Brazil

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Inverness, Scotland
Khartoum, Sudan (University College of Khartoum)
Port Lockroy
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
Baker Lake, Canada
Churchill, Canada
Fort Chimo, Canada
Ottawa, Canada
Prince Rupert, Canada
Resolute Bay, Canada
Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
Formosa, China

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

All India Radio (Government of India), New Delhi, India:
Bombay, India
Delhi, India
Madras, India
Tiruchy (Tiruchirapalli), India

Indian Council of Scientific and Industrial Research, Radio Research Committee:
Calcutta, India

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Rarotonga, Cook Is.

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa
Nairobi, Kenya (East African Meteorological Department)

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
Kiruna, Sweden

United States Army Signal Corps:
Adak, Alaska
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
Guam I.
Maui, Hawaii
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 73 through 84 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 85 presents ionosphere character figures for Washington, D. C., during May 1954, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

See the last column of table 87a in this issue for the April 1954 character figures for Washington, D. C., which were not published in last month's issue.

RADIO PROPAGATION QUALITY FIGURES

Tables 87a and 87b give for April 1954 the radio propagation quality figures for the North Atlantic area, the relevant CRPL advance and short-term forecasts, a summary geomagnetic activity index and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qa, separately for each 6-hour interval of the Greenwich day, viz., 00-06, 06-12, 12-18, 18-24 hours UT (Universal Time or GCT).
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the four quarter-day Qa-figures, before rounding off, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which designate whenever possible the days when significant disturbance or unusually quiet conditions will occur.
(c) short-term forecasts, issued by CRPL every six hours (nominally one hour before 00^h, 06^h, 12^h, 18^h UT) and applicable to the period 1 to 13 (especially 1 to 7) hours ahead. Note that new scoring rules have been adopted beginning with October 1952 data.
(d) advance forecasts, issued semiweekly (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.
(e) half-day averages of the geomagnetic K indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.
(f) illustration of the comparison of short-term forecasts with Qa-figures and also with estimates of radio quality based on CRPL observations only.
(g) illustration of the outcome of advance forecasts (1 to 3 or 4 days ahead) and, for comparison, the outcome of a type of "blind" forecast. For the latter the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

These radio propagation quality figures, Qa, are prepared from radio traffic data reported to CRPL by American Telephone and Telegraph Company, Mackay Radio and Telegraph Company, RCA Communications, Inc., Marconi Company, British Admiralty Signal and Radar Establishment, and the following agencies of the U. S. Government:--Coast Guard, Navy, Army Signal Corps, and U. S. Information Agency. The method of calculation, summarized below, is similar to that described in a 1946 report, IRPL-R31, now out of print. Only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the quality scale of the original reports. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. The 6-hourly quality figures are (subjectively) weighted means of the reports received for that period. These 6-hourly quality figures replace, beginning January 1953, the half-daily quality figures which formerly appeared in this table. (These forecasts and quality indices are prepared by the North Atlantic Radio Warning Service, the CRPL forecasting center at Ft. Belvoir, Virginia.)

Table 86 gives for April 1954, the radio propagation quality figures for the North Pacific area, the relevant CRPL advance and short-term forecasts, and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qp, separately for each of three 9-hour intervals of the Greenwich day, viz., 03-12, 09-18 and 18-03 UT (Universal Time or GCT).
(b) whole-day radio quality indices for each Greenwich day. These are derived from the same basic data as the 9-hour indices, separately reduced.
(c) short-term forecasts, issued daily at 02, 09 and 18 hours UT.
(d) advance forecasts, issued semiweekly (CRPL-Jp reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole day quality indices.

These radio quality indices, Qp, refer to radio propagation on optimum frequencies over moderately long transmission paths in the North Pacific area. Typical paths are Anchorage (Alaska) to Seattle, or Anchorage to Tokyo. The indices are derived from reports submitted regularly by communications agencies of the U. S. Army and Air Force, and by Aeronautical Radio, Inc. The method of derivation of Qp differs from that of Qa. For Qp, each reported index is converted into a deviation (usually) from the 3-monthly mean for that index, in units of the standard deviation. These deviations are averaged for all reports for a given 9-hour period. The average is then put on the 1 to 9 Q-scale with an assumed standard deviation of 1.25 and assumed means of 5.33, 5.33, and 6.00, respectively, for the 03-12, 09-18 and 18-03 periods, and 5.67 for the whole day period. (These forecasts and quality indices are prepared by the North Pacific Radio Warning Service, the CRPL forecasting center at Anchorage, Alaska.)

These quality figures are, in effect, a consensus of reported radio propagation conditions. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

OBSERVATIONS OF THE SOLAR CORONA

Tables 88 through 90 give the observations of the solar corona during May 1954, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 91 through 93 list the coronal observations obtained at Sacramento Peak, New Mexico, during May 1954, derived by Harvard College Observatory as a part of its performance of a research contract with the Upper Air Research Observatory, Geophysical Research Directorate, Air Force Cambridge Research Center. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 88 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 89 gives similarly the intensities of the first red (6374A) coronal line; and table 90, the intensities of the second red (6702A) coronal line; all observed at Climax in May 1954.

Table 91 gives the intensities of the green (5303A) coronal line; table 92, the intensities of the first red (6374A) coronal line; and table 93, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in May 1954.

The following symbols are used in tables 88 through 93: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

RELATIVE SUNSPOT NUMBERS

Table 94 lists the daily provisional Zurich relative sunspot number, R_Z, for May 1954, as communicated by the Swiss Federal Observatory. Table 95 contains the daily American relative sunspot number, R_A', for April 1954, as compiled by the Solar Division, American Association of Variable Star Observers.

OBSERVATIONS OF SOLAR FLARES

Table 96 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris) and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 97 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following three criteria: (1) the sum of the eight Kp's; (2) the greatest Kp; and (3) the sum of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Kp is available from 1937 to date as noted in F108.

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

SUDDEN IONOSPHERE DISTURBANCES

Table 98 shows that no sudden ionosphere disturbances were observed at Ft. Belvoir, Virginia, during the months of April and May 1954.

ERRATUM

CRPL-F114, p. 12, table 1: At 02 in foF2 column, the value should be 2.6;
p. 21, table 50: In 02 column, the median value should be 2.6;
p. 44, fig. 1: At 02 in foF2 curve, reading should be 2.6.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) — May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.9					2.5	3.1
01	290	2.5					2.8	3.1
02	290	2.3					2.9	3.1
03	290	2.2					2.9	3.2
04	(280)	2.0					3.2	3.1
05	250	2.7					3.0	3.3
06	310	3.6	220	3.2	120	1.8	3.1	3.25
07	330	4.1	210	3.5	110	2.3	3.8	3.25
08	350	4.4	210	3.8	100	2.6	4.4	3.1
09	340	4.8	200	4.0	100	2.8	4.4	3.1
10	340	4.9	200	4.1	100	3.0	4.3	3.1
11	360	4.9	200	4.2	100	3.0	4.4	3.0
12	370	4.9	200	4.2	100	3.2	3.7	3.0
13	390	4.8	200	4.2	100	3.2	3.5	3.0
14	380	4.8	210	4.1	100	3.1	3.3	2.9
15	370	4.9	220	4.0	100	3.0	3.8	3.0
16	340	5.0	220	3.8	110	2.8	4.1	3.0
17	300	5.3	230	3.6	110	2.5	4.3	3.1
18	280	5.8	240	3.2	110	1.9	4.7	3.1
19	250	6.0					4.4	3.2
20	240	5.7					4.3	3.3
21	240	4.6					3.5	3.2
22	250	3.7					3.0	3.2
23	270	3.0					3.0	3.1

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Fairbanks, Alaska (64.9°N, 147.8°W) — March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.7	---
01	(340)	(2.2)					5.0	(3.0)
02	---	---					5.6	---
03	(310)	(2.4)					5.6	(3.0)
04	(350)	(2.0)					5.2	(2.9)
05	(360)	(2.0)					4.6	(2.9)
06	320	2.6	---	---	---	---	4.5	3.1
07	280	2.8	240	---	120	2.0	3.9	3.1
08	300	3.4	240	3.3	120	2.0	2.0	3.1
09	310	3.7	220	3.4	120	2.2	2.5	3.1
10	360	3.8	220	3.5	120	2.4		3.0
11	360	3.8	210	3.6	120	2.3		3.0
12	370	4.0	210	3.6	120	2.4		3.0
13	340	4.0	210	3.6	120	2.4		3.0
14	310	4.0	230	3.6	120	2.4		3.2
15	290	4.1	230	(3.5)	120	2.2		3.2
16	260	4.0	220	---	---	---		3.3
17	250	4.0	240	---	---	---		3.3
18	260	3.5						3.2
19	280	3.0					2.3	(3.1)
20	300	2.7					3.6	(3.0)
21	340	(2.2)					4.0	(3.1)
22	(350)	(2.3)					5.0	(3.0)
23	---	(2.1)					4.8	(2.9)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 3

Anchorage, Alaska (61.2°N, 149.9°W) — March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(2.0)					2.5	(2.95)
01	(360)	1.8					2.4	2.8
02	(350)	(2.0)					2.1	(2.9)
03	370	(2.3)					2.2	(2.8)
04	340	(1.8)					2.0	(2.8)
05	320	(2.2)					1.6	(2.9)
06	300	2.6	---	---	120	1.6		3.1
07	270	3.1	240	2.9	120	1.8		3.2
08	320	3.3	230	3.2	120	2.2		3.1
09	490	3.6	220	3.4	120	2.2		3.0
10	380	3.9	210	3.5	120	2.3		2.9
11	420	4.0	210	3.6	120	2.4		2.8
12	400	4.1	210	3.6	120	2.5		2.9
13	340	4.2	220	3.6	120	2.5		3.15
14	320	4.3	220	3.5	120	2.4		3.1
15	290	4.3	230	3.4	120	2.3		3.3
16	270	4.3	230	3.2	130	2.1		3.3
17	250	4.1	240	---	---	---		3.4
18	240	3.8						3.3
19	240	3.2						3.2
20	240	2.6						3.15
21	270	2.4						3.0
22	310	2.2						3.0
23	330	(2.2)						(3.0)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 4

Adak, Alaska (51.9°N, 176.6°W) — March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.0						3.0
01	270	3.0						3.0
02	270	3.0						3.0
03	270	2.9						3.0
04	260	2.9						3.1
05	250	2.9						3.2
06	250	3.2	---	---	---	---		3.3
07	240	4.1	230	---	120	1.8		3.4
08	270	4.5	230	3.6	120	2.2		3.3
09	300	4.9	230	3.8	120	2.4	2.6	3.3
10	300	4.9	210	3.9	110	2.5	2.7	3.2
11	300	5.6	210	4.0	110	2.7		3.2
12	280	5.8	210	4.0	110	2.7		3.3
13	290	5.7	210	4.0	110	2.6		3.3
14	270	5.7	230	3.9	110	2.5		3.3
15	270	5.5	230	3.7	120	2.4		3.4
16	250	5.4	230	3.3	120	2.2		3.5
17	230	5.0	---	---	120	1.8		3.5
18	230	4.5			---	---	1.4	3.5
19	220	3.5						3.3
20	250	3.0						3.2
21	250	2.9						3.2
22	260	3.0						3.1
23	270	3.0						3.0

Time: 180.0° W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 5

Graz, Austria (47.1°N, 15.5°E) — March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.9						
01	300	2.9						
02	300	2.9						
03	300	2.8						
04	290	2.6						
05	280	2.4						
06	280	2.6						
07	240	3.9	240	(3.1)				
08	230	4.3	200	3.5	110	(2.8)		
09	250	4.8	200	3.7	110	(2.9)		
10	260	5.0	200	3.9	110	(3.0)		
11	275	5.0	200	4.0	110	3.0	3.0	
12	260	5.4	200	4.0	110	2.9		
13	270	5.1	200	4.0	110	2.9		
14	260	5.1	200	4.0				
15	250	5.2	210	3.7				
16	240	5.1	220	3.5				
17	230	5.0	230	(3.1)				
18	220	4.9						
19	250	4.1						
20	250	3.8						
21	280	3.1						
22	280	2.9						
23	300	2.9						

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 6

San Francisco, California (37.4°N, 122.2°W) — March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	(3.0)					2.2	3.0
01	(270)	3.0					2.4	3.0
02	(260)	3.1					2.2	3.1
03	260	(3.2)						(3.1)
04	(250)	3.0						3.2
05	260	3.0						3.1
06	260	(3.2)					(2.4)	(3.2)
07	260	4.3	250	---	(130)	(2.0)	(2.3)	3.4
08	280	4.9	230	(3.6)	120	(2.4)	3.4	3.3
09	310	5.2	220	(3.9)	120	(2.6)	3.6	3.2
10	330	5.3	210	(4.0)	110	(2.8)	3.8	3.0
11	320	5.8	210	(4.0)	120	(3.0)	3.9	3.0
12	300	6.3	220	(4.1)	(120)	(3.0)	3.7	3.1
13	320	6.0	230	(4.2)	(120)	(3.1)	3.6	3.1
14	300	5.8	230	(4.1)	120	(3.0)	3.8	3.2
15	300	5.5	230	(4.0)	120	(2.9)	3.6	3.2
16	280	5.2	240	(3.7)	120	(2.6)	2.7	3.3
17	250	5.2	240	---	(120)	(2.2)	2.9	3.4
18	240	4.7	---	---	---	---	1.9	3.4
19	230	3.8					2.4	3.3
20	240	3.3					2.3	3.2
21	(260)	(2.9)					2.5	(3.1)
22	(270)	3.1					2.4	3.0
23	(280)	3.0					2.5	3.0

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 7

White Sands, New Mexico (32.3°N, 106.5°W) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3					3.0	3.0
01	280	3.3					2.4	3.0
02	270	3.3					2.4	3.0
03	260	3.3					2.2	3.1
04	270	3.2					2.2	3.05
05	270	3.0						3.1
06	260	3.5					2.2	3.1
07	250	4.5	240	---	120	1.9	3.9	3.3
08	270	5.2	220	3.7	120	2.3	3.7	3.3
09	300	5.3	210	4.0	120	2.6	3.9	3.3
10	310	5.5	200	4.1	120	3.0	3.8	3.1
11	310	6.0	200	4.2	120	3.0	4.0	3.1
12	310	6.4	200	4.2	120	3.2	3.9	3.0
13	310	6.7	210	4.3	120	3.2	3.4	3.2
14	300	6.4	220	4.2	120	3.1	3.9	3.15
15	300	5.8	220	4.0	120	2.9	3.9	3.2
16	280	5.8	220	3.8	120	2.6	3.7	3.3
17	260	5.6	230	3.2	120	2.2	3.3	3.4
18	230	5.3					2.9	3.4
19	230	4.4					2.4	3.3
20	250	3.5					2.6	3.2
21	270	3.2						3.05
22	280	3.2						3.0
23	300	3.2						3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 8

Formosa, China (25.0°N, 121.5°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.4					2.0	2.8
01	260	3.5					2.1	3.1
02	250	3.7					1.8	3.2
03	240	3.4						3.4
04	240	2.6						3.2
05	260	2.1						3.0
06	260	2.8						3.1
07	240	5.3			120	2.0		3.5
08	250	6.1	230	3.9	120	2.6		3.2
09	280	6.9	240	4.2	120	2.9	3.8	3.2
10	300	7.6	230	4.3	120	3.1	3.7	3.1
11	310	9.2	230	4.4	120	3.2	3.8	3.1
12	290	10.8	220	4.4	120	(3.3)	4.4	3.2
13	280	11.2	220	4.4	120	(3.3)	4.2	3.3
14	280	11.6	230	4.3	120	3.2	4.2	3.3
15	270	11.4	230	4.1	110	3.1	4.1	3.4
16	240	10.2	220	3.8	120	2.8	3.7	3.4
17	240	8.6	220	3.4	120	2.4	3.7	3.7
18	230	6.8			---	---	3.2	3.5
19	230	5.6					3.3	3.4
20	240	4.8					2.2	3.2
21	270	4.0					2.0	3.1
22	280	3.9					1.9	2.9
23	300	3.8						2.9

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 9

Maui, Hawaii (20.8°N, 156.5°W) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.2					1.3	3.1
01	270	3.3					1.6	3.1
02	250	3.2					1.2	3.3
03	230	2.7					1.6	3.35
04	250	2.0						3.3
05	270	1.9						3.0
06	300	1.9						3.0
07	250	4.5	240	---	140	1.7	2.4	3.4
08	(270)	5.7	240	---	120	2.4	3.3	3.3
09	320	6.6	230	4.2	120	2.8	4.2	3.0
10	340	8.0	210	4.4	120	3.0	4.6	2.9
11	360	8.9	220	4.4	120	3.2	4.5	2.8
12	340	10.0	210	4.5	120	3.3	4.8	2.9
13	320	11.2	210	4.5	120	3.3	4.5	3.0
14	300	11.6	210	4.4	120	3.2	4.6	3.0
15	280	11.2	230	4.3	120	3.0	4.0	3.1
16	270	10.7	230	4.1	120	2.8	3.8	3.2
17	250	9.0	240	---	120	2.4	3.7	3.3
18	240	6.6			130	1.6	3.4	3.4
19	240	5.8					3.5	3.3
20	240	4.5					2.2	3.2
21	250	3.9					1.9	3.15
22	280	3.3					2.0	3.05
23	290	3.5					1.5	2.9

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 10

Puerto Rico, W. I. (18.5°N, 67.2°W) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.7						3.1
01	260	3.8						3.1
02	240	3.7						3.2
03	230	3.7						3.3
04	230	3.2					1.9	3.4
05	230	2.7						3.3
06	250	2.5						3.1
07	220	4.2	---	---	---	---		3.55
08	240	5.2	230	---	110	2.3	2.8	3.5
09	270	5.8	220	4.0	110	2.7	3.2	3.4
10	290	6.5	220	4.3	110	3.0	2.7	3.3
11	300	7.0	220	4.3	110	3.2	3.5	3.2
12	290	7.7	210	4.4	110	3.3	3.4	3.2
13	280	8.0	210	4.4	110	3.3	3.2	3.2
14	280	8.3	210	4.3	110	3.2	2.4	3.2
15	270	8.4	220	4.2	110	3.1	2.9	3.3
16	250	7.7	220	4.0	110	2.9	4.1	3.5
17	250	6.7	220	---	110	2.5	3.6	3.5
18	230	6.5	230	---	110	---	2.9	3.5
19	210	5.9					2.4	3.4
20	220	4.6						3.3
21	250	3.9						3.1
22	270	3.7						3.0
23	280	3.6						3.0

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 11

Guam I. (13.6°N, 144.9°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.3					2.5	3.1
01	260	4.2					1.6	3.1
02	260	3.6					1.6	3.3
03	260	3.0						3.2
04	< 260	2.4						3.3
05	250	1.9					1.8	3.4
06	240	1.7					1.8	3.4
07	240	5.1	240	---	120	(1.5)	2.8	3.6
08	260	6.2	230	---	120	2.5	3.8	3.5
09	300	7.2	220	4.1	110	2.9	4.8	3.1
10	320	7.9	210	4.2	110	3.1	4.7	2.8
11	350	8.4	200	4.3	110	(3.2)	4.7	2.5
12	350	8.2	200	4.3	110	3.2	4.3	2.4
13	360	8.0	200	4.3	110	3.2	4.4	2.4
14	340	8.5	200	4.2	110	3.2	4.5	2.6
15	320	9.3	220	4.2	110	3.0	4.4	2.9
16	300	9.5	230	4.1	110	(2.7)	3.8	3.1
17	270	9.9	230	---	120	2.4	3.9	3.1
18	250	9.6	250	---	---	---	3.4	3.2
19	240	9.0					2.6	3.2
20	240	8.0					2.4	3.3
21	230	6.6					2.7	3.4
22	240	5.7					2.8	3.2
23	260	4.6					2.6	3.1

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 12

Kiruna, Sweden (67.8°N, 20.3°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					2.6	---
01	---	---						---
02	---	---						---
03	(350)	(2.0)						(3.0)
04	---	---						---
05	---	---						---
06	---	---						---
07	290	2.0						3.3
08	250	3.1	---	---	---	---		3.5
09	250	3.4	---	---	---	---		3.7
10	250	3.7	---	---	---	---		3.6
11	250	3.9	220	2.8	---	---		3.6
12	250	4.3	210	---	---	---		3.6
13	250	4.2	---	---	---	---		3.6
14	250	4.1	---	---	---	---		3.6
15	230	3.8	---	---	---	---		3.6
16	240	3.2	---	---	---	---		3.6
17	(260)	(2.5)					2.0	(3.6)
18	---	---					3.1	---
19	---	---					3.4	---
20	---	---					2.8	---
21	---	---					4.0	---
22	---	---					3.1	---
23	---	---					3.3	---

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 13

Fairbanks, Alaska (64.9°N, 147.8°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		---					5.0	
01		---					5.1	
02		---					5.5	
03		---					5.7	
04		---					5.4	
05		---					4.5	
06		---					4.5	
07		(1.9)					4.5	
08		2.6		---			3.4	
09		3.4		---		---	2.5	
10		3.8		---		---	2.2	
11		4.0		---		1.9		
12		4.3		---		2.0	2.8	
13		4.4		---		---		
14		4.6		---		---	2.0	
15		4.3		---		---	1.8	
16		4.0		---			1.8	
17		3.6					(4.0)	
18		2.8					3.6	
19		(1.9)					3.4	
20		(1.8)					5.0	
21		(2.0)					3.8	
22		(2.0)					3.8	
23		(2.2)					4.4	

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 14

Adak, Alaska (51.9°N, 176.6°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		2.7						
01		2.7						
02		2.7						
03		2.7						
04		2.6						
05		2.5						
06		2.7						
07		3.2					2.1	
08		4.1		---		1.9		
09		4.9		3.1		2.1		
10		5.4		3.6		2.4		
11		5.6		3.8		2.4		
12		5.6		3.8		2.4		
13		5.7		3.8		2.4		
14		5.5		---		2.3		
15		5.6		---		2.1		
16		5.2						
17		4.4						
18		3.1						
19		2.5						
20		2.3						
21		2.4						
22		2.5						
23		2.7						

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 15

Guam I. (13.6°N, 144.9°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.1						3.2
01	250	4.0						3.2
02	250	3.6						3.2
03	240	3.1						3.4
04	260	2.6						3.4
05	260	2.2					1.7	3.3
06	280	1.3					1.7	(3.4)
07	250	4.1	240	---	---	E	1.9	3.5
08	260	6.0	230	---	120	2.3		3.4
09	290	7.3	220	4.0	110	2.7		3.2
10	320	8.0	210	4.2	110	3.0	2.8	2.8
11	340	8.0	200	4.2	110	3.1	3.4	2.6
12	350	7.7	200	4.2	110	3.2	4.2	2.5
13	350	7.4	200	4.2	110	3.2	4.0	2.6
14	340	8.0	200	4.2	110	(3.1)	4.4	2.6
15	330	8.4	220	4.2	110	3.0	4.2	2.8
16	300	8.8	220	4.1	110	2.8	3.2	3.0
17	280	9.0	240	---	120	2.4	3.4	3.2
18	250	8.8	---	---			3.2	3.2
19	240	8.6					2.8	3.3
20	230	7.6					2.4	3.3
21	230	6.2					2.6	3.3
22	240	5.1					2.6	3.3
23	240	4.4					2.4	3.3

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 16

Leopoldville, Belgian Congo (4.3°S, 15.3°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	230	3.4						2.3
01	260	3.2						2.3
02	250	3.1						2.4
03	250	2.9					1.4	2.4
04	250	2.5					1.6	2.6
05	240	3.0	---	---	---	---	1.8	2.6
06	255	5.2	230	---	120	2.1	2.6	2.7
07	270	6.2	220	4.0	110	2.6	2.6	2.6
08	310	6.5	220	4.1	110	3.0	3.0	2.4
09	360	7.3	215	4.2	110	3.2	3.0	2.1
10	365	8.2	210	4.3	110	3.4	3.3	2.2
11	370	9.0	200	4.3	110	3.5	3.2	2.1
12	380	9.2	210	4.3	110	3.5	2.8	2.1
13	350	10.0	200	4.2	110	3.4	3.1	2.2
14	350	10.0	210	4.1	110	3.1	3.5	2.2
15	335	10.4	220	4.0	110	2.8	3.4	2.2
16	310	10.3	240	---	115	2.3	3.0	2.2
17	270	10.1	250	---	---	---	2.3	2.3
18	245	< 9.2					2.2	2.4
19	245	8.6						2.4
20	245	8.2						2.4
21	230	8.1						2.5
22	215	8.1						2.8
23	200	5.6						2.7

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 17

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.4						3.0
01	250	3.4						3.1
02	240	3.3					1.8	3.2
03	240	3.1					1.8	3.2
04	250	2.8					2.7	3.1
05	250	2.7						3.1
06	250	3.6	---	---	---	---	2.2	3.3
07	260	4.7	230	3.4	120	2.2		3.3
08	320	5.1	220	3.9	110	2.6	3.6	3.2
09	330	5.6	210	4.1	110	2.9	3.8	3.1
10	320	6.2	200	4.3	110	3.1	4.0	3.0
11	330	6.3	200	4.3	110	3.3	3.7	3.0
12	330	6.4	200	4.4	110	3.3	3.6	3.0
13	330	6.6	200	4.4	110	3.3	3.7	2.9
14	320	6.4	210	4.3	110	3.3	3.6	3.0
15	320	6.8	220	4.1	110	3.1	3.9	3.1
16	300	6.6	220	4.0	110	2.9	3.8	3.2
17	280	6.2	220	3.7	110	2.6	3.3	3.2
18	260	6.1	230	3.1	120	2.0	3.0	3.2
19	240	6.0					2.2	3.3
20	240	5.6						3.2
21	240	4.7					2.0	3.2
22	240	3.8						3.1
23	260	3.5						3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 18

Capetown, Union of S. Africa (34.2°S, 18.3°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.2						3.1
01	< 260	3.2						3.0
02	260	3.2					2.2	3.0
03	< 260	3.2					2.2	3.0
04	250	3.2					2.0	3.1
05	< 250	3.1						3.1
06	250	3.0						3.1
07	250	4.0	240	3.0	130	1.8	1.8	3.3
08	280	4.7	240	3.6	120	2.3		3.2
09	320	5.2	230	4.0	120	2.7	3.2	3.1
10	340	5.4	220	4.1	110	3.0	3.5	3.0
11	340	5.9	220	4.2	110	3.1	3.8	3.0
12	340	6.0	200	4.2	110	3.2	3.7	2.9
13	340	6.3	200	4.3	110	3.2	3.9	2.9
14	340	6.2	220	4.2	110	3.2	3.6	3.0
15	330	6.1	210	4.2	110	3.1	3.8	3.0
16	310	6.2	220	4.1	110	3.0	3.6	3.1
17	290	5.8	220	3.9	110	2.8	3.4	3.2
18	290	5.6	220	3.5	120	2.3	3.1	3.2
19	250	5.4	240	2.9	120	1.8	2.6	3.3
20	240	5.0					2.2	3.2
21	240	4.8					2.1	3.3
22	240	4.0					1.8	3.2
23	250	3.6					1.7	3.2

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 19

Resolute Bay, Canada (74.7°N, 94.9°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.3						3.2
01	250	2.3						3.2
02	250	2.0						3.2
03	270	2.0					2.7	3.2
04	270	2.1					3.8	3.2
05	270	2.4					3.5	3.2
06	280	2.1					3.4	3.2
07	250	2.5					1.8	3.2
08	260	2.6					3.1	3.2
09	250	3.0					3.7	3.2
10	250	3.0			---	---	3.2	3.2
11	250	3.0			120	1.0	3.4	3.2
12	240	3.4			120	1.1	1.9	3.2
13	240	3.1			120	1.1		3.2
14	230	3.2			---	---		3.2
15	250	3.1						3.2
16	240	3.0						3.2
17	240	3.1						3.2
18	240	3.0						3.2
19	250	3.0						3.2
20	250	2.8						3.2
21	260	2.4						3.2
22	260	2.7						3.2
23	250	2.6						3.2

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 20

Fairbanks, Alaska (64.9°N, 147.8°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(2.1)					4.5	(3.0)
01		(2.1)					4.1	(3.0)
02		(2.3)					4.7	(3.0)
03		(2.1)					4.5	(2.8)
04		(2.0)					4.5	(2.8)
05		(1.9)					4.0	(2.8)
06		(1.8)					4.0	(2.9)
07		(1.8)					4.5	(2.8)
08		(1.8)					4.4	(3.0)
09		2.8					2.5	3.3
10		3.7				---	2.5	3.5
11		4.2				---	2.3	3.5
12		4.5				---	1.9	3.5
13		4.7				---	2.3	3.5
14		4.6				---	3.6	3.5
15		4.2				---	2.4	3.5
16		3.4					3.8	3.4
17		2.6					4.0	3.4
18		2.1					3.8	3.4
19		(1.6)					4.6	(3.2)
20		---					4.0	---
21		(2.0)					3.7	(3.2)
22		(2.5)					4.0	(3.3)
23		(2.5)					4.2	(3.1)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 21

Baker Lake, Canada (64.3°N, 96.0°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.0			---	E	7.0	3.2
01	260	2.0			---	E	6.0	3.2
02	250	1.8			---	E	5.2	3.2
03	260	1.8			---	E	4.8	3.2
04	260	2.3			---	1.1	4.8	(3.3)
05	250	2.4			---	1.3	4.0	(3.2)
06	250	2.6			130	1.6	3.8	(3.2)
07	250	2.8			120	2.1	4.1	(3.2)
08	260	3.2			110	2.3	4.4	(3.2)
09	270	3.6			110	2.4	4.8	3.2
10	270	4.0			110	3.0	3.4	3.2
11	260	4.1			100	2.7	3.3	3.3
12	260	4.3	---	---	110	2.8	2.3	3.3
13	250	4.8			110	2.6		3.3
14	250	5.0			110	2.3		3.3
15	240	4.5			120	2.2	2.6	3.3
16	250	3.8			120	2.2	2.3	3.2
17	280	3.3	---	---	120	2.2	2.6	(3.1)
18	260	3.4			120	2.1	4.0	3.1
19	250	3.2			120	2.1	5.0	(3.0)
20	250	3.0			130	1.7	6.0	3.0
21	240	2.6			---	E	6.4	(3.1)
22	240	2.7			---	E	7.0	3.0
23	250	2.4			---	E	7.5	3.2

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 22

Churchill, Canada (58.8°N, 94.2°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---			---	---	7.0	
01	---	---			---	---	6.0	---
02	---	---			---	---	5.0	---
03	---	---			---	---	5.0	
04	---	---			---	---	4.5	
05	---	---			---	---	4.6	
06	---	---			---	---	5.0	---
07	---	---			---	---	5.4	---
08	(300)	(3.1)			---	---	5.1	---
09	260	3.5			110	2.0	4.6	3.4
10	260	4.1	---	---	120	2.1	3.2	3.4
11	250	4.4	---	---	110	2.4		3.4
12	260	4.8	220	---	120	2.4		3.4
13	260	5.0	220	---	120	2.2		3.3
14	250	5.2	220	---	120	2.1		3.4
15	240	5.0	---	---	120	2.0		3.4
16	230	4.8			120	1.9		3.4
17	250	4.0			---	---	3.5	3.3
18	270	3.2			120	---	3.8	3.3
19	290	2.7			---	---	3.7	3.2
20	320	2.8			---	---	4.1	(3.1)
21	(320)	(2.8)			---	---	4.8	---
22	---	---			---	---	4.6	---
23	---	---			---	---	5.8	

Time: 90.0°W.
Sweep: 0.6 Mc to 10.0 Mc in 15 seconds.

Table 23

Fort Chimo, Canada (58.1°N, 68.3°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	<2.5			110	2.5	4.2	
01	---	2.3			110	2.7	4.4	
02	---	<3.0			100	3.0	4.2	
03	---	---			100	3.4	4.3	
04	---	---			100	3.1	4.3	---
05	---	---			100	3.2	4.0	
06	---	---			100	2.7	4.0	
07	---	<2.0			100	2.3	3.5	
08	240	3.3			100	1.8		(3.5)
09	230	4.0	210	---	100	2.0		3.5
10	230	4.4	210	---	100	2.2		3.5
11	240	4.9	210	---	110	2.2		3.5
12	240	5.2	200	---	110	2.3		3.4
13	240	5.2	220	(3.1)	110	2.2		3.4
14	230	5.2	210	---	120	2.0		3.4
15	240	5.0			110	2.1		(3.4)
16	240	4.2			100	2.1		---
17	260	3.1			100	3.0		
18	270	2.8			100	3.0	2.2	
19	280	<2.6			100	2.9	3.2	
20	260	3.0			100	2.4	5.2	
21	---	<2.8			---	---	6.1	
22	---	---			100	3.6	4.3	
23	---	---			100	2.9	5.1	

Time 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 24

Prince Rupert, Canada (54.3°N, 130.3°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	1.5					2.4	
01	290	1.4					2.2	
02	300	1.5					>3.0	
03	300	1.5					3.0	---
04	290	1.5					4.0	
05	300	1.6					3.1	
06	300	1.8					4.0	
07	290	1.5					3.4	
08	270	1.9					3.0	---
09	240	3.4	---	---	110	E	3.0	3.4
10	230	4.4	210	---	110	1.9	2.1	3.5
11	230	4.9	220	---	110	2.1		3.5
12	240	5.2	220	3.3	110	2.2		3.5
13	240	5.3	210	3.3	110	2.3		3.5
14	240	5.7	220	---	120	2.2		3.5
15	230	5.3	220	---	120	2.0		3.5
16	210	4.7	---	---	120	1.8		3.5
17	210	4.0	---	---	---	E		3.4
18	210	3.1	---	---				3.4
19	250	2.1						---
20	270	1.7						---
21	(260)	1.5					1.2	
22	---	1.6					2.1	
23	---	1.6						

Time: 120.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 25

Winnipeg, Canada (49.9°N, 97.4°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	380	(2.3)						---
01	350	(2.3)					3.5	---
02	(300)	(2.5)					3.5	---
03	350	(2.5)					3.8	---
04	(300)	(2.4)					3.4	---
05	340	(2.2)					3.9	---
06	---	(2.3)					3.9	---
07	(320)	(2.4)					3.4	---
08	260	2.4						3.2
09	230	3.9	210	---	120	1.9		3.4
10	240	4.6	220	---	120	2.1		3.4
11	250	5.0	220	---	120	2.3		3.4
12	260	5.3	220	3.6	120	2.5		3.4
13	260	5.6	220	3.5	120	2.5		3.4
14	250	5.8	220	---	120	2.4		3.4
15	240	5.6	230	---	120	2.2		3.4
16	230	5.2	220	---	130	1.9		3.5
17	220	4.4						3.4
18	230	3.5						3.3
19	250	2.5						3.2
20	300	1.9						3.0
21	(350)	1.8						---
22	(480)	(2.2)						---
23	(400)	(2.4)						---

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 26

Ottawa, Canada (45.4°N, 75.9°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	360	1.6						---
01	(340)	1.6						---
02	360	1.8						(3.1)
03	350	1.9					2.2	(3.1)
04	310	2.0					3.0	(3.2)
05	290	2.0					2.5	3.2
06	300	2.0					2.3	3.1
07	290	2.2						3.2
08	230	3.7	---	---	160	1.9		3.5
09	230	4.6	220	2.6	120	2.1		3.5
10	250	5.0	210	3.4	120	2.4		3.5
11	260	5.4	210	3.7	120	2.6		3.4
12	250	5.4	210	3.8	120	2.7		3.5
13	260	5.5	220	3.8	120	2.7		3.4
14	260	5.7	230	3.5	120	2.5		3.5
15	250	5.3	230	3.2	120	2.3		3.5
16	230	5.0	230	---	130	1.9		3.4
17	220	4.5						3.4
18	240	3.6						3.3
19	250	3.0						3.3
20	270	2.3						3.3
21	300	2.0						3.2
22	360	1.8						(3.2)
23	360	1.7						---

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 27

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.5					2.7	3.1
01	250	3.3					2.6	3.2
02	250	3.0					2.6	3.1
03	250	2.9					2.4	3.1
04	250	2.7					2.0	3.1
05	250	2.7					2.0	3.1
06	240	4.0	250	---	130	1.8	2.4	3.3
07	290	4.7	230	3.6	110	2.3	3.1	3.2
08	330	5.2	220	4.0	110	2.8	3.8	3.1
09	340	5.7	210	4.1	110	3.1	3.9	3.1
10	360	5.8	200	4.3	110	3.2	4.1	2.9
11	350	6.4	200	4.4	110	3.3	4.2	2.9
12	340	6.8	200	4.4	110	3.4	4.2	2.9
13	340	7.2	200	4.4	110	3.4	4.0	2.9
14	320	7.1	200	4.3	110	3.3	3.8	3.0
15	310	7.1	210	4.2	110	3.2	3.8	3.0
16	290	6.9	210	4.0	110	2.9	3.6	3.2
17	270	6.2	210	3.7	110	2.6	3.6	3.2
18	260	5.4	220	3.2	120	2.1	3.1	3.3
19	240	5.2			---	---	3.0	3.2
20	240	5.3					2.2	3.1
21	240	4.7					2.5	3.2
22	240	4.1					2.4	3.2
23	260	3.6					2.4	3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 28

Capetown, Union of S. Africa (34.2°S, 18.3°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
000	250	3.3					2.6	3.0
01	<260	3.2					2.6	3.0
02	260	3.2					3.0	3.0
03	260	3.2					3.0	3.0
04	260	3.0					2.6	3.0
05	250	3.0					2.1	3.0
06	240	3.6	250	---	140	1.6	2.3	3.2
07	280	4.4	240	3.4	120	2.1	3.0	3.3
08	340	5.0	230	3.8	110	2.6	3.5	3.0
09	350	5.2	220	4.0	110	2.9	3.8	3.0
10	360	5.5	210	4.2	110	3.1	4.2	2.9
11	360	5.9	210	4.3	110	3.2	4.4	2.9
12	350	6.4	200	4.3	110	3.3	4.1	2.9
13	340	6.5	200	4.3	110	3.3	4.8	2.9
14	330	6.6	200	4.3	110	3.3	4.3	3.0
15	320	6.4	200	4.2	110	3.2	4.0	3.0
16	320	6.0	210	4.1	110	3.1	4.0	3.0
17	300	5.6	220	4.0	110	2.9	3.8	3.1
18	290	5.5	210	3.7	110	2.5	3.3	3.2
19	260	5.2	220	3.0	120	2.0	3.0	3.3
20	230	5.2					2.5	3.3
21	230	5.0					2.3	3.2
22	240	4.0					2.6	3.2
23	240	3.6					2.4	3.1

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 29

Baker Lake, Canada (64.3°N, 96.0°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.2			---	E	8.0	(3.2)
01	260	2.4			---	E	7.0	(3.0)
02	270	2.4			---	---	6.0	(3.0)
03	260	2.4			---	E	5.0	(3.0)
04	260	2.5			170	1.4	4.0	(2.9)
05	250	2.6			120	1.6	5.8	(3.0)
06	250	2.7			120	1.8	4.4	(3.1)
07	250	3.0			120	1.8	4.2	(3.0)
08	260	3.0			110	2.3	3.6	(3.1)
09	250	3.4			110	2.6	4.2	(3.2)
10	280	3.6			110	2.7	4.0	3.2
11	260	4.0			100	2.6	3.9	3.2
12	260	4.2			120	2.3	3.4	3.1
13	250	4.8			120	2.2	3.0	3.2
14	250	5.0			120	2.0		3.2
15	240	4.2			120	2.0	2.8	3.2
16	260	3.5			120	2.3	4.4	3.1
17	260	3.3			120	2.4	7.0	(3.1)
18	260	3.4			120	2.3	6.0	---
19	250	3.3			120	2.0	5.0	(3.0)
20	250	2.9			120	2.0	6.0	3.0
21	250	2.8			---	E	5.8	3.0
22	250	2.5			---	E	6.5	3.0
23	260	2.3			---	E	7.2	(3.0)

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 30

Reykjavik, Iceland (64.1°N, 21.8°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.6	---
01	---	---					4.2	---
02	---	(2.9)					4.0	(3.1)
03	320	(2.4)					4.1	(3.0)
04	330	(2.4)					1.8	(3.0)
05	335	2.3						(3.1)
06	---	---					3.0	---
07	---	---					(3.9)	---
08	---	---					(3.7)	---
09	280	2.5						3.2
10	250	3.0						3.4
11	235	3.6						3.4
12	240	4.0			120	---		3.4
13	240	4.2						3.4
14	240	4.1	---	---				3.4
15	240	3.7						3.4
16	260	3.0						3.2
17	260	(2.6)					3.6	(3.2)
18	---	(2.4)					3.9	(3.1)
19	---	---					4.3	---
20	---	---					4.0	---
21	---	---					4.4	---
22	---	---					5.1	---
23	---	---					4.7	---

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 31

Wakkanai, Japan (45.4°N, 141.7°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.2					2.4	3.0
01	280	3.3					2.4	3.0
02	270	3.1					2.4	3.1
03	250	3.0					2.2	3.1
04	250	2.9					1.6	3.2
05	230	2.9					2.4	3.4
06	250	2.6					2.6	3.4
07	220	3.5					2.7	3.6
08	220	4.7	---	---	---	2.0	2.7	3.7
09	230	5.3	240	3.4	120	2.2	3.2	3.6
10	230	6.0	230	3.6	120	2.5	3.3	3.6
11	230	5.8	230	3.6	120	2.6	2.6	3.6
12	230	5.6	230	3.6	120	2.6		3.6
13	230	5.5	230	3.5	120	2.5	2.6	3.6
14	230	5.4	220	---	120	2.3	2.5	3.6
15	220	5.0			120	---	2.0	3.6
16	210	4.2						3.6
17	230	3.2						3.5
18	250	2.8					2.2	3.3
19	250	2.8					2.8	3.3
20	250	2.7					2.8	3.2
21	260	2.8					3.0	3.1
22	260	3.0					2.7	3.1
23	280	3.1					2.7	3.1

Time: 135.0°E.
Sweep: 1.0 Mc to 15.5 Mc in 2 minutes.

Table 32

Akita, Japan (39.7°N, 140.1°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.0					3.0	2.9
01	280	3.1					2.7	2.9
02	280	3.1					2.6	2.8
03	250	3.0					2.6	3.0
04	250	2.8					2.4	3.0
05	240	2.8					2.6	3.2
06	240	2.4					2.4	3.2
07	220	3.8	---	---	---	---	2.3	3.4
08	220	4.7	220	---	120	2.0	3.2	3.6
09	240	5.3	220	3.3	110	2.4	4.2	3.5
10	250	6.0	240	3.7	110	2.6	4.2	3.4
11	240	6.6	220	3.7	110	2.7	3.5	3.6
12	240	5.7	220	3.7	110	2.7	3.5	3.5
13	240	5.5	230	3.6	120	2.6	3.3	3.5
14	240	5.5	240	3.5	120	2.5	3.5	3.5
15	230	5.4	220	---	120	2.1	3.1	3.6
16	220	4.7			---	---	3.0	3.5
17	210	3.2					2.8	3.4
18	240	2.8					2.8	3.3
19	240	2.8					3.0	3.4
20	250	2.7					3.2	3.2
21	250	2.8					3.1	3.1
22	260	3.0					3.2	3.0
23	280	3.0					3.1	2.8

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 33

Tokyo, Japan (35.7°N, 139.5°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.8					2.8	3.0
01	280	2.9					2.8	2.9
02	270	3.0					2.8	3.0
03	250	2.9					2.7	3.1
04	240	2.9					2.7	3.1
05	240	2.6					2.6	3.1
06	250	2.4					2.5	3.1
07	220	4.3	---	---	160	1.7	2.7	3.5
08	220	5.2	220	---	120	2.2	2.9	3.5
09	240	5.2	230	3.6	120	2.5	3.3	3.4
10	250	5.7	220	3.9	120	2.7	3.8	3.4
11	250	6.4	230	4.0	120	2.8	4.5	3.5
12	250	5.8	220	4.0	110	2.8	3.3	3.4
13	250	6.1	230	3.8	110	2.8	3.5	3.4
14	250	5.6	230	3.6	120	2.6	3.4	3.4
15	230	5.5	230	3.0	120	2.3	3.0	3.5
16	220	5.0	---	---	130	1.7	3.0	3.5
17	220	3.7					2.8	3.4
18	240	2.8					3.0	3.1
19	240	3.0					3.2	3.2
20	240	2.8					2.7	3.2
21	250	2.7					3.2	3.1
22	250	2.7					2.8	3.0
23	280	2.7					2.8	2.9

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 34

Yamagawa, Japan (31.2°N, 130.6°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	2.5					2.0	2.9
01	310	2.6					1.8	2.9
02	300	2.7					2.0	3.0
03	290	2.7					1.8	3.1
04	260	2.7					2.0	3.1
05	270	2.5					2.0	3.2
06	290	2.4					2.0	3.0
07	250	3.2	---	---	---	---	2.2	3.2
08	240	4.9	---	---	130	2.0	2.2	3.6
09	250	5.1	240	---	120	2.3	2.0	3.5
10	260	5.8	240	3.9	110	2.7	3.4	3.4
11	260	6.0	250	4.0	120	2.8	3.4	3.3
12	270	6.6	220	4.0	110	2.9	4.0	3.4
13	270	6.4	220	4.0	110	2.8	3.6	3.4
14	280	6.4	250	3.9	---	2.8	3.6	3.4
15	260	6.0	250	3.7	110	2.5	3.6	3.5
16	250	5.8	230	3.1	120	2.2	3.4	3.5
17	240	4.9	---	---	---	---	3.4	3.6
18	240	3.5					2.6	3.4
19	260	2.9					2.5	3.1
20	260	2.8					2.6	3.1
21	260	2.6					2.5	3.1
22	270	2.6					2.4	3.1
23	300	2.5					2.1	3.1

Time: 135.0°E.
Sweep: 0.8 Mc to 20.0 Mc in 15 minutes, manual operation.

Table 35

Calcutta, India (22.6°N, 88.4°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	4.6						3.3
01	(210)	(4.2)						
02	(240)	(4.1)						
03	(225)	(3.6)						3.2
04	(240)	(3.2)						
05	(210)	(2.4)						
06	(210)	3.2						3.05
07	(220)	(4.8)				---		
08	210	6.5				2.4		
09	210	7.7				2.7		3.05
10	210	8.8				3.0		
11	210	10.0				3.2		
12	(210)	(9.6)				3.1		3.05
13	(210)	(9.4)				3.2		
14	(210)	(9.6)				3.0		
15	(230)	9.6				3.0		3.0
16	(240)	(9.0)				---		
17	(240)	(8.8)						
18	(210)	(9.6)						3.25
19	(210)	(5.2)						
20	(210)	(4.6)						
21	(240)	(4.5)						3.1
22	(210)	(4.1)						
23	(210)	(4.0)						

Time: 90.0°E.
Sweep: 0.5 Mc to 18.0 Mc in 10 minutes, semi-automatic operation.

Table 36

Rarotonga I. (21.3°S, 159.8°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.2					3.9	3.0
01	270	5.5					3.2	3.0
02	280	4.8					3.0	3.15
03	300	3.9					3.0	3.0
04	290	4.1					2.9	2.9
05	300	3.9					2.5	2.95
06	250	4.7	---	---	---	1.9	3.1	3.2
07	260	6.0	230	3.8	110	2.4	3.7	3.3
08	290	6.5	230	4.2	105	2.8	4.4	3.1
09	300	7.0	200	4.3	105	3.1	4.5	3.2
10	320	7.8	200	4.3	105	3.3	4.7	3.1
11	330	8.7	200	4.4	105	3.4	4.5	2.9
12	340	9.4	200	4.4	105	3.4	5.4	2.85
13	320	10.3	200	4.4	105	3.4	4.7	3.0
14	310	10.3	200	4.3	105	3.4	4.5	3.0
15	310	9.7	---	4.2	105	3.2	4.7	3.0
16	290	9.3	---	4.1	110	3.0	4.2	3.1
17	280	9.1	240	3.8	110	2.6	5.2	3.0
18	260	8.3			125	---	4.1	3.1
19	260	7.6					4.0	3.0
20	290	7.1					3.5	2.9
21	300	6.4					3.5	2.9
22	300	6.5					3.0	2.9
23	290	6.0					3.2	2.9

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 37*

Inverness, Scotland (57.4°N, 4.2°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	345	(1.8)						(2.8)
01	330	1.6						2.8
02	315	1.5						2.9
03	330	1.5					2.3	2.8
04	320	(1.5)					2.5	2.9
05	305	(1.5)					2.4	(2.9)
06	(270)	(1.5)					2.4	(3.1)
07	290	(1.8)					2.4	3.0
08	240	2.7					2.4	3.4
09	225	3.8	(220)		(125)	1.8	2.4	3.6
10	240	4.6	215	(3.1)	(125)	2.0	2.4	3.5
11	240	4.9	215	3.2	(115)	2.2	2.4	3.5
12	240	5.1	215	3.2	120	2.2	2.4	3.5
13	245	5.2	220	3.2	120	2.1	2.4	3.5
14	240	5.2	225	(3.0)	135	2.0	2.0	3.5
15	235	5.0			150	1.8	2.1	3.4
16	220	4.3					2.4	3.4
17	230	3.5					2.6	3.2
18	240	2.5						3.3
19	265	1.9						3.3
20	290	(1.7)						3.1
21	320	(1.7)						3.0
22	350	(1.7)						(2.9)
23	345	(1.6)						

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 38*

Slough, England (51.5°N, 0.6°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	2.9					2.4	2.9
01	270	2.9					2.4	2.9
02	265	2.8					2.5	3.0
03	265	2.4					2.6	2.9
04	270	2.2					2.6	3.0
05	255	2.0					2.9	3.0
06	265	2.0					2.5	3.2
07	245	2.5					2.5	3.3
08	225	4.0			130	1.7	3.2	3.5
09	230	4.8	220	3.0	125	2.0	3.2	3.6
10	245	5.0	215	3.4	125	2.3	3.6	3.4
11	250	5.8	215	3.6	125	2.5	3.5	3.4
12	250	5.8	220	3.6	125	2.5	3.5	3.5
13	240	5.6	215	3.4	125	2.4	3.6	3.5
14	245	5.3	225	3.1	125	2.2	3.5	3.4
15	235	5.3			130	2.0	3.4	3.4
16	225	4.6					3.0	3.4
17	230	3.8					3.0	3.4
18	240	3.2					2.6	3.2
19	260	2.6					2.4	3.0
20	280	2.4					2.4	3.0
21	285	2.4					2.4	2.9
22	290	2.6					2.4	2.8
23	285	2.8					2.2	2.9

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 39

Delhi, India (28.6°N, 77.1°E) November 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.6						3.2
01	280	2.7						3.3
02	--	2.5						3.2
03	--	--						---
04	240	3.0						3.6
05	250	3.0						3.5
06	240	3.3						3.6
07	220	5.6						3.8
08	240	6.8						3.6
09	240	7.0						3.6
10	240	7.2						3.6
11	240	7.5						3.6
12	240	7.0						3.6
13	260	7.0						3.5
14	240	7.5						3.6
15	240	7.2						3.6
16	220	6.9						3.8
17	220	6.0						3.8
18	200	4.2						3.8
19	240	3.4						3.5
20	240	3.2						3.6
21	240	3.0						3.4
22	260	2.8						3.4
23	280	2.6						3.8

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 40

Calcutta, India (22.6°N, 88.4°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(240)	(3.6)						3.2
01	(210)	(3.6)						
02	(225)	(3.2)				---		
03	(210)	(3.6)						3.3
04	(210)	(3.2)						
05	(210)	(2.8)						
06	(220)	(3.3)						3.2
07	(210)	(6.8)				2.0		
08	210	7.8				2.5	3.1	
09	210	8.7				2.8		3.3
10	225	10.8				3.2		
11	(210)	(10.6)				3.4		
12	(210)	(11.0)				---		3.1
13	210	11.0				3.2		
14	210	(11.0)				3.1		
15	210	(11.0)				3.2		3.4
16	210	11.0				2.6	3.0	
17	200	10.8				---		
18	180	9.4						3.3
19	190	7.1						
20	210	5.5					3.0	
21	(210)	(5.2)						3.2
22	210	4.1						
23	220	3.6						

Time: 90.0°E.
Sweep: 0.5 Mc to 18.0 Mc in 10 minutes, semi-automatic operation.

Table 41

Bombay, India (19.0°N, 73.0°E) November 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	300	5.7						3.1
08:30	330	7.1						3.0
09	330	7.6						2.9
10	360	8.4						2.8
11	390	10.1						2.7
12	390	10.7						2.6
13	390	11.2						2.6
14	400	11.6						2.6
15	420	11.8						2.6
16	400	11.7						2.6
17	390	11.2						2.6
18	360	10.8						2.8
19	360	10.1						2.9
20	330	8.4						2.9
21	300	7.0						3.0
22	300	5.3						3.1
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 42

Madras, India (13.0°N, 80.2°E) November 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	300	5.7						3.0
07	360	7.1						2.8
08	360	7.9						2.7
09	390	8.2						2.6
10	420	8.1						2.6
11	420	8.4						2.5
12	420	8.8						2.5
13	420	9.0						2.5
14	420	9.2						2.5
15	420	9.7						2.6
16	390	9.8						2.6
17	390	10.3						2.6
18	390	9.0						2.6
19	360	8.1						2.7
20	345	7.6						2.8
21	330	6.8						2.9
22	300	6.2						3.1
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 43

Tiruchy, India (10.8°N, 78.8°E) November 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	330	4.8						3.0
07	360	6.7						2.8
08	390	7.6						2.6
09	420	7.5						2.5
10	420	7.5						2.5
11	420	7.7						2.5
12	450	8.4						2.4
13	450	8.4						2.5
14	450	8.6						2.4
15	450	8.8						2.4
16	450	> 8.6						2.4
17	420	8.5						2.5
18	420	8.5						2.5
19	420	8.0						2.6
20	420	7.6						2.6
21	360	7.4						2.7
22								
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 44*

Singapore, British Malaya (1.3°N, 103.8°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	235	4.6					2.0	3.1
01	250	3.8					2.2	3.0
02	260	3.6					1.8	3.1
03	255	2.9					2.1	3.1
04	255	2.5					2.4	3.1
05	260	2.3					2.8	3.2
06	250	3.9			140	1.3	2.8	3.2
07	255	6.3	235		120	2.3	3.2	3.1
08	300	7.2	220	4.2	115	2.8	3.8	2.8
09	355	7.6	215	4.4	115	3.1	4.3	2.4
10	385	8.1	210	4.4	110	3.3	4.3	2.3
11	395	8.4	205	4.5	110	3.4	5.9	2.2
12	410	8.2	205	4.5	110	3.4	5.6	2.1
13	395	8.4	200	4.4	110	3.3	5.8	2.1
14	375	8.6	200	4.4	110	3.2	5.4	2.3
15	350	9.0	205	4.3	115	3.0	5.9	2.3
16	335	9.2	230	4.2	115	2.6	5.5	2.4
17	260	9.2			125	2.1	5.8	2.5
18	265	9.0				(1.4)	4.6	2.6
19	290	8.3					3.8	2.7
20	295	7.5					3.7	2.7
21	275	7.6					3.1	2.9
22	235	8.3					2.9	3.3
23	210	5.9					2.8	3.3

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 45

Rarotonga I. (21.3°S, 159.8°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.2					3.0	3.05
01	250	6.4					2.8	3.1
02	250	5.3					3.0	3.0
03	285	4.5					2.6	2.9
04	300	4.2					2.4	2.9
05	290	4.2					2.3	3.0
06	250	5.9			—	1.9	2.9	3.2
07	250	6.7	230	3.8	110	2.5	3.5	3.3
08	280	7.3	220	4.2	110	2.8	4.1	3.2
09	300	7.6	210	4.4	105	3.1	4.5	3.05
10	310	8.4	200	4.5	105	3.3	4.6	3.0
11	310	9.4	200	4.5	105	3.4	4.5	3.0
12	305	10.3	200	4.5	105	3.4	4.2	3.0
13	310	10.3	200	4.5	105	3.4	4.2	3.0
14	290	10.5	200	4.5	105	3.3	4.1	3.1
15	290	10.1	210	4.4	110	3.2	3.8	3.1
16	280	9.6	220	4.1	110	2.9	3.9	3.1
17	280	9.1	240	---	110	2.5	4.1	3.1
18	260	8.7			--	E	4.0	3.1
19	260	7.8					4.0	3.0
20	280	7.1					4.0	2.8
21	300	6.9					3.8	2.8
22	300	6.6					3.2	2.8
23	300	6.4					3.0	2.8

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 46*

Invernees, Scotland (57.4°N, 4.2°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	325	(1.9)						2.8
01	340	1.9						2.8
02	325	(1.8)						2.8
03	325	1.9						2.8
04	310	2.0					2.3	(2.9)
05	290	1.8					2.5	(3.0)
06	(265)	(2.0)					2.4	(3.1)
07	255	2.8			(150)	(1.6)	1.8	3.2
08	245	4.0	235	(3.0)	125	1.8	2.3	3.4
09	255	4.5	225	3.4	115	2.1	2.4	3.4
10	290	4.9	215	3.6	110	2.3	2.5	3.3
11	285	5.2	210	3.7	110	2.4	2.6	3.3
12	275	5.6	210	3.8	110	2.5	2.7	3.3
13	270	5.8	215	3.7	110	2.5	2.6	3.4
14	260	5.7	220	3.6	115	2.4	2.3	3.3
15	260	5.6	230	3.5	120	2.2	1.8	3.3
16	260	5.3	245		125	2.0		3.3
17	250	5.1			(145)	(1.6)	1.9	3.3
18	245	5.1						3.2
19	260	4.3						3.2
20	255	3.6						3.3
21	265	3.0						3.1
22	305	2.2						2.9
23	325	1.9						2.9

Time: 0.00.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 47*

Slough, England (51.5°N, 0.6°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	2.9					2.4	2.8
01	285	2.9					2.5	2.8
02	285	2.9					2.6	2.8
03	285	2.9					2.6	2.8
04	280	2.6					2.6	3.0
05	265	2.4					3.2	3.0
06	270	2.4					2.5	3.0
07	250	3.9	(230)	(2.6)	135	1.7	2.7	3.3
08	265	4.8	235	3.2	125	2.1	3.4	3.4
09	280	5.4	230	3.6	120	2.4	3.8	3.3
10	280	5.8	225	3.8	120	2.6	4.0	3.4
11	280	6.1	215	3.9	120	2.7	3.9	3.4
12	280	6.3	220	3.9	120	2.8	3.9	3.4
13	260	6.0	225	3.8	120	2.7	3.9	3.4
14	260	6.1	230	3.7	120	2.5	3.6	3.4
15	260	6.1	240	3.5	125	2.3	3.5	3.3
16	250	5.8	235	3.2	130	2.0	2.9	3.4
17	240	5.5			(130)	(1.6)	3.1	3.4
18	245	5.3					3.1	3.2
19	245	4.4					2.6	3.2
20	245	3.7					2.4	3.2
21	270	3.0					2.6	3.0
22	285	2.9					2.4	2.9
23	290	2.9					2.4	2.8

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 48

Delhi, India (28.6°N, 77.1°E) October 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	3.1						3.2
01	280	3.0						3.2
02	(280)	2.9						(3.3)
03								
04	280	3.2						3.3
05	260	3.3						3.4
06	240	4.1						3.5
07	240	6.7						3.6
08	240	7.4						3.6
09	240	7.9						3.6
10	240	8.1						3.4
11	280	8.2						3.3
12	280	9.1						3.2
13	280	9.4						3.3
14	260	>9.4						3.4
15	260	>9.4						3.4
16	240	8.1						3.4
17	240	7.9						3.6
18	240	6.8						3.6
19	240	4.2						3.6
20	240	4.0						3.4
21	260	>3.5						3.4
22	280	3.2						3.3
23	290	3.4						3.1

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 49

Calcutta, India (22.6°N, 88.4°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(225)	4.2						3.1
01	(210)	3.6						
02	(240)	3.8						
03	(240)	3.8						3.1
04	(240)	3.1						
05	(210)	2.8						
06	210	4.6				---		3.3
07	210	8.5				2.3	3.1	
08	210	8.8				2.6	3.8	
09	210	9.2				2.9	3.4	3.1
10	225	10.2				3.2		
11	240	11.0				3.5		
12	240	11.0				3.8		3.1
13	225	11.0				3.6		
14	210	11.2				3.5		
15	210	11.0				3.1		3.3
16	210	11.3				2.6	3.0	
17	180	11.0				---	2.8	
18	180	10.8						3.5
19	180	8.8						
20	195	6.4						
21	(195)	5.0						3.35
22	(210)	4.9						
23	(230)	4.2						

Time: 90.0°E.
Sweep: 0.5 Mc to 15.0 Mc in 10 minutes, semi-automatic operation.

Table 50

Bombay, India (19.0°N, 73.0°E) October 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	300	6.4						3.1
08	330	7.5						3.1
09	360	8.1						2.8
10	360	9.2						2.8
11	390	10.2						2.7
12	390	10.8						2.6
13	420	11.4						2.6
14	420	11.8						2.5
15	420	12.1						2.5
16	420	12.4						2.5
17	390	11.7						2.6
18	390	11.1						2.7
19	360	10.1						2.8
20	330	8.2						3.0
21	300	6.7						3.1
22	300	5.3						3.1
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 51*

Khartoum, Sudan (15.6°N, 32.6°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(275)	(6.5)					3.1	
01	(250)	(7.6)					3.1	
02	(225)	7.1					3.1	(3.3)
03	(215)	4.0					3.1	(3.3)
04	(230)	2.6					3.1	(3.3)
05	(265)	2.3					3.9	
06	(250)	4.7					3.4	(3.2)
07	(240)	6.9				(2.4)	5.2	(3.1)
08	(290)	8.3	(235)	(4.1)	(125)	(2.8)	4.1	(2.9)
09	(290)	10.0	(250)	(4.2)		(3.1)	4.6	(2.9)
10	(300)	10.4	(215)	(4.4)			4.8	(2.7)
11	(315)	10.5	(205)	(4.4)			4.6	(2.6)
12	(310)	10.8	(210)	(4.4)			6.9	(2.7)
13	(290)	11.5	(210)	(4.3)			6.9	(2.9)
14	(285)	11.8	(210)	(4.2)			6.9	(3.0)
15	(275)	12.0	(215)	(3.9)		(2.9)	6.8	(3.0)
16	(260)	11.7	(235)	(3.7)			6.4	(3.1)
17	(245)	11.6					5.7	(3.1)
18	(240)	10.8					4.4	(3.0)
19	(240)	9.6					3.1	(3.0)
20	(250)	8.7					4.0	(3.0)
21	(265)	7.9					6.3	(2.8)
22	(280)	6.9					6.2	(2.8)
23	(280)	(7.2)					3.1	

Time: 30.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 52

Madras, India (13.0°N, 80.2°E) October 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	300	6.2						3.0
07	360	7.5						2.9
08	390	8.2						2.7
09	420	8.9						2.6
10	420	8.5						2.5
11	420	8.5						2.5
12	420	8.6						2.5
13	420	8.8						2.5
14	420	10.0						2.6
15	420	10.2						2.6
16	390	10.6						2.6
17	390	10.5						2.6
18	390	10.4						2.6
19	360	9.1						2.8
20	360	8.5						2.8
21	345	>7.6						2.9
22	(330)	---						(3.0)
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 53

Tiruchy, India (10.8°N, 78.8°E) October 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	360	5.6						2.8
07	390	7.5						2.6
08	420	8.2						2.5
09	450	8.2						2.4
10	450	7.8						2.4
11	480	7.6						2.4
12	480	8.0						2.3
13	480	8.5						2.3
14	480	9.2						2.3
15	480	>9.8						2.4
16	450	10.5						2.4
17	420	>10.5						2.4
18	420	>9.5						2.5
19	420	>9.0						2.5
20	390	>8.7						2.6
21	360	8.3						2.7
22								
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 54*

Singapore, British Malaya (1.3°N, 103.8°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	215	5.3					2.6	3.3
01	250	4.6					1.7	2.9
02	255	4.4					1.9	3.1
03	260	3.5					3.0	3.1
04	255	2.8					2.6	3.1
05	260	2.6					3.0	3.2
06	250	4.4			(140)	(1.3)	3.1	3.3
07	260	7.0	235		125	2.3	3.6	3.3
08	295	7.9	225		120	2.8	4.9	3.0
09	325	8.1	220	4.4	115	3.1	4.9	2.6
10	355	8.7	210	4.5	110	3.4	4.9	2.4
11	355	9.7	205	4.6	110	3.5	5.6	2.2
12	355	9.4	200	4.6	110	3.5	6.0	2.0
13	365	9.4	200	4.6	110	3.4	5.2	2.1
14	340	9.6	200	4.5	110	3.3	5.2	2.4
15	310	9.8	215		115	3.0	5.5	2.6
16	290	9.8	230		115	2.7	4.4	2.6
17	265	9.7	240		125	2.1	4.6	2.6
18	265	9.7					3.5	2.6
19	285	9.4					3.7	2.7
20	285	8.9					3.7	2.8
21	255	9.0					3.2	3.0
22	225	9.0					2.1	3.3
23	215	7.5					2.8	3.4

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 55

Nairobi, Kenya (1.3°S, 36.8°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	200	6.1						3.7
01	210	4.3						2.9
02	260	4.3						2.9
03	260	4.4					2.1	2.9
04	260	4.4					2.0	3.1
05	230	4.0					2.6	3.2
06	230	3.7					2.6	3.3
07	240	6.2	230	---	120	2.2	3.0	3.5
08	260	7.6	220	4.0	110	2.7	3.7	3.4
09	280	7.8	220	4.4	110	3.0	4.0	3.3
10	300	8.7	210	4.5	110	3.3	3.7	3.0
11	310	9.4	---	4.7	100	---	4.0	3.0
12	320	10.2	---	4.7	110	---		2.9
13	330	10.0	---	4.7	100	---		2.9
14	350	10.9	---	4.6	110	---	(4.7)	2.8
15	340	10.5	---	4.5	110	---	4.6	2.9
16	320	10.8	200	4.4	110	2.9	4.2	2.9
17	290	10.2	230	---	110	---	3.8	2.9
18	280	9.9	250	---	---	---	3.1	2.9
19	280	> 10.0					2.8	2.9
20	270	> 10.0					2.6	2.9
21	250	10.2						3.1
22	220	10.7						3.4
23	210	10.5						3.6

Time: 45.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 56

Sao Paulo, Brazil (23.5°S, 46.5°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	7.8						3.2
01	240	7.2						3.3
02	220	8.4						3.4
03	220	5.8						3.3
04	220	4.8						3.3
05	220	4.3						3.5
06	210	5.5						3.8
07	220	6.6						3.6
08	260	7.0					3.3	3.4
09	280	7.5					3.2	3.0
10	310	8.4						2.9
11	355	9.4					4.0	2.8
12	320	10.0					4.0	3.0
13	325	10.4						3.0
14	300	11.8					4.0	3.1
15	280	12.2					3.3	3.2
16	260	12.4					3.4	3.4
17	240	12.6					3.2	3.4
18	220	12.4						3.5
19	210	11.6						(3.7)
20	200	10.0						3.4
21	220	8.9						3.3
22	230	9.0						3.5
23	240	8.7						3.1

Time: Local.
Sweep: 2.5 Mc to 20.0 Mc in 6 minutes.

Table 57*

Falkland Is. (51.7°S, 57.8°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	4.8						2.8
01	290	4.6						2.8
02	290	4.6						2.8
03	270	4.4						2.9
04	265	4.2						2.9
05	235	4.6			140	(1.4)		3.1
06	230	5.2	(240)		125	(1.8)	2.5	3.5
07	235	5.2	225		110	2.4	2.9	3.5
08	(290)	5.6	225	(4.0)	110	2.7	3.2	3.3
09	285	6.0	220	4.2	105	2.9	3.8	3.3
10	280	6.3	220	4.4	105	(3.0)	3.6	3.2
11	290	7.1	(205)	4.4	105	3.1	3.8	3.1
12	290	7.4	(215)	4.4	105	3.1	3.5	3.2
13	270	7.4	220	4.4	105	(3.1)	3.7	3.3
14	270	6.9	220	4.2	105	3.0	3.5	3.3
15	(260)	6.2	215	4.1	105	2.8	3.0	3.4
16	(255)	6.0	225	(3.8)	110	2.5	3.0	3.4
17	245	5.9	230		115	2.1	2.8	3.4
18	240	5.7			145	1.7	1.9	3.3
19	250	5.8					1.7	3.1
20	265	5.7					1.7	2.9
21	260	5.6						2.9
22	270	5.4						2.8
23	280	5.1						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 58*

Port Lockroy (64.8°S, 63.5°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.0						2.8
01	270	4.5						2.9
02	265	4.1						2.8
03	275	3.9						2.9
04	265	3.8			(135)	(1.4)	1.2	2.9
05	250	4.2			110	1.6	1.3	3.0
06	240	4.4			110	1.8		3.2
07	235	4.8			105	2.1		3.3
08	235	4.9			100	2.4		3.3
09	225	5.2			100	2.6		3.4
10	235	5.2	(210)		100	2.7		3.3
11	235	5.7	210		100	2.6		3.2
12	250	6.0	210	(3.8)	100	2.8		3.4
13	255	5.7	205	(4.0)	100	2.8		3.2
14	255	5.9	210	(4.0)	100	2.7		3.4
15	230	5.5	(210)		100	2.6		3.4
16	230	5.4			100	2.4		3.3
17	235	5.2			105	2.2		3.3
18	240	5.2			115	1.8		3.2
19	250	5.5			130	1.6		3.0
20	265	6.5						2.9
21	260	6.3						2.9
22	265	6.0						2.8
23	270	5.4						2.9

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.
*Average values except foF2 and fEs, which are median values.

Table 59

Delhi, India (28.6°N, 77.1°E) September 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	3.8						(3.2)
01	(300)	3.2						(3.0)
02	(300)	(3.3)						(3.1)
03	---	---						---
04	280	3.2						3.2
05	260	3.8						3.4
06	240	4.7						3.6
07	240	6.0						3.5
08	240	7.1						3.5
09	240	7.0						3.4
10	280	7.0						3.2
11	320	8.0						3.1
12	280	9.1						3.2
13	280	9.4						3.2
14	280	9.0						3.2
15	280	8.9						3.3
16	260	8.1						3.4
17	260	7.5						3.4
18	240	7.0						3.4
19	240	6.0						3.6
20	260	4.6						3.4
21	280	3.8						3.2
22	310	3.6						3.1
23	300	3.2						3.1

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 60

Calcutta, India (22.6°N, 88.4°E) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.4						2.95
01	(240)	(4.4)						
02	(240)	(3.9)						
03	(240)	(3.6)						2.9
04	(240)	(3.0)						
05	(240)	(2.6)						
06	(210)	(4.5)				---		3.2
07	225	6.6				2.4	3.6	
08	225	8.2				2.6	3.5	
09	240	8.5				3.0	3.8	2.85
10	240	10.2				3.2	3.6	
11	250	11.0				3.4		
12	255	10.3				3.6		2.85
13	240	11.0				3.6		
14	240	11.0				3.6		
15	255	11.0				3.3	3.6	2.85
16	240	11.0				3.1	3.8	
17	210	11.0				---	3.7	
18	240	11.0					3.4	3.0
19	210	10.1						
20	210	7.2						
21	210	5.4						3.2
22	(240)	4.3						
23	(240)	4.3						

Time: 90.0°E.
Sweep: 0.5 Mc to 18.0 Mc in 10 minutes, semi-automatic operation.

Table 61

Bombay, India (19.0°N, 73.0°E) September 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	(270)	(4.6)						(3.4)
07	270	6.4						3.2
08	300	7.4						3.0
09	330	7.9						2.9
10	360	8.7						2.8
11	390	9.8						2.6
12	420	10.6						2.6
13	420	11.0						2.6
14	420	11.6						2.5
15	420	11.7						2.5
16	420	11.9						2.6
17	390	11.9						2.6
18	390	11.4						2.8
19	330	9.8						3.0
20	330	7.6						3.0
21	300	6.1						3.0
22	300	4.6						3.1
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 62

Madras, India (13.0°N, 80.2°E) September 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	330	5.9						3.0
07	360	7.5						2.8
08	375	8.1						2.6
09	420	8.2						2.6
10	420	8.1						2.6
11	420	8.0						2.5
12	420	8.5						2.5
13	420	8.8						2.4
14	420	9.2						2.4
15	420	9.3						2.5
16	420	10.4						2.6
17	420	10.8						2.6
18	375	10.4						2.6
19	360	>8.9						2.7
20	360	7.8						2.8
21	360	6.9						2.8
22								
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 63

Tiruchy, India (10.8°N, 78.8°E) September 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	360	5.1						2.9
07	420	7.2						2.6
08	450	7.8						2.4
09	480	7.4						2.4
10	480	7.2						2.3
11	480	7.5						2.3
12	480	7.4						2.3
13	480	7.8						2.3
14	480	8.4						2.3
15	480	9.6						2.4
16	450	9.9						2.4
17	450	10.2						2.4
18	450	9.8						2.4
19	435	8.5						2.5
20	420	>7.8						2.6
21	360	7.3						2.6
22								
23								

Time: 75.0 E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 64

Sao Paulo, Brazil (23.5°S, 46.5°W) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	7.0						3.4
01	220	5.6						3.5
02	225	5.8						3.7
03	220	4.0						3.4
04	240	3.5						(3.2)
05	260	3.2						(3.4)
06	232	3.8						3.5
07	220	5.7						3.6
08	240	6.4						3.4
09	280	7.8						3.3
10	300	8.6						3.2
11	290	9.7						3.0
12	300	9.8						3.1
13	300	10.0						3.2
14	280	11.0						3.2
15	260	10.9						3.5
16	220	10.3						3.6
17	220	9.0						3.5
18	205	9.2						3.6
19	200	(7.0)						(3.7)
20	200	6.6						(3.5)
21	220	6.6						3.3
22	235	6.8						3.2
23	240	5.2						3.4

Time: Local.
Sweep: 2.5 Mc to 20.0 Mc in 6 minutes.

Table 65*

Falkland Ie. (51.7°S, 57.8°W) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.0						2.7
01	305	2.9						2.7
02	295	3.0						2.8
03	285	2.9						2.9
04	260	2.8						3.1
05	250	2.8						3.1
06	235	3.8			175	1.6	1.2	3.4
07	225	4.8			155	2.1	2.2	3.6
08	245	5.2	220		115	(2.4)	3.0	3.5
09	245	5.5	215		115	(2.5)	3.8	3.5
10	260	5.8	220	(4.0)	110	(2.8)	4.6	3.3
11	270	6.6	220	4.2	110	(2.9)	3.8	3.4
12	275	6.4	215	4.2	110	2.9	3.3	3.4
13	255	6.5	225	4.1	105	2.9	3.1	3.4
14	250	5.9	220	4.0	110	2.7	2.6	3.5
15	245	5.7	215	3.6	110	2.6	2.7	3.6
16	245	5.7	225		120	2.2	2.5	3.5
17	230	5.5			150	1.7	2.9	3.5
18	230	4.8					2.1	3.3
19	240	4.2						3.1
20	250	3.6						3.1
21	265	3.3						3.0
22	295	3.3						2.8
23	310	3.3						2.7

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 66*

Port Lockroy (64.8°S, 63.5°W) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.7						2.7
01	290	2.7						2.7
02	290	2.6						2.8
03	290	2.5						2.8
04	270	2.5						2.9
05	260	2.4						3.0
06	240	3.0			(125)	(1.5)		3.1
07	235	4.0			125	1.8		3.4
08	225	4.5			(120)	(1.9)		3.5
09	230	5.0			110	2.3		3.4
10	230	5.2			105	2.4		3.4
11	220	5.2			(105)	(2.5)		3.3
12	220	5.5	(200)	(3.0)	(105)	(2.6)		3.4
13	225	5.6	(200)		(105)	(2.6)		3.3
14	230	5.5	(200)		105	2.4		3.4
15	230	5.5			110	2.2		3.4
16	230	5.1			115	2.0		3.4
17	235	5.0			(115)	(1.8)		3.3
18	235	4.8						3.3
19	240	4.6						3.1
20	250	4.4						3.0
21	265	3.7						2.8
22	280	3.1						2.7
23	300	3.0						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.
*Average values except foF2 and fEs, which are median values.

Table 67

Delhi, India (28.6°N, 77.1°E) August 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04	---	---						(3.1)
05	300	> 4.0						3.0
06	280	4.5						3.2
07	280	5.5						3.3
08	280	6.2						3.2
09	300	6.3						3.1
10	320	6.6						3.0
11	300	7.2						3.0
12	320	7.6						3.0
13	320	7.9						3.0
14	320	8.3						3.0
15	300	8.9						3.0
16	280	> 9.0						3.2
17	280	8.2						3.2
18	280	8.5						3.3
19	(280)	> 7.0						(3.4)
20	---	---						(3.2)
21	---	---						
22	---	---						
23	---	---						

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 68

Bombay, India (19.0°N, 73.0°E) August 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	270	4.8						3.4
07	300	5.9						3.2
08	330	7.2						3.0
09	330	7.4						2.9
10	380	8.2						2.7
11	420	8.9						2.6
12	420	9.4						2.5
13	420	10.1						2.5
14	420	10.4						2.5
15	420	10.9						2.6
16	360	11.3						2.7
17	330	10.8						2.8
18	330	10.3						2.9
19	320	9.3						3.0
20	300	7.8						3.1
21	300	6.2						3.0
22	300	5.1						3.2
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 69

Madrae, India (13.0°N, 80.2°E) August 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	330	5.7						2.9
07	390	6.5						2.7
08	390	7.0						2.6
09	420	7.0						2.5
10	420	6.9						2.5
11	440	6.9						2.4
12	450	7.1						2.4
13	450	7.4						2.4
14	450	8.1						2.4
15	450	8.4						2.4
16	440	8.9						2.5
17	420	8.9						2.5
18	420	>9.0						2.5
19	390	>8.4						2.6
20	390	7.2						2.6
21	360	6.8						2.8
22								
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 70

Tiruchy, India (10.8°N, 78.8°E) August 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	360	4.6						2.9
07	390	6.4						2.6
08	420	6.8						2.4
09	460	6.9						2.4
10	480	6.6						2.3
11	500	6.7						2.3
12	510	6.8						2.2
13	510	7.0						2.2
14	510	7.3						2.2
15	480	>7.8						2.2
16	480	8.5						2.3
17	480	8.6						2.4
18	480	8.4						2.4
19	450	7.9						2.5
20	420	7.0						2.6
21	390	6.0						2.6
22								
23								

Time: 75.0 E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 71

Sao Paulo, Brazil (23.5°S, 46.5°W) August 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.5						(3.3)
01	250	3.7						3.3
02	220	3.4						(3.4)
03	220	3.5						(3.7)
04	---	2.0						---
05	---	E						---
06	---	2.1						---
07	210	(4.4)						---
08	245	5.7						(3.5)
09	(300)	6.0						(3.4)
10	300	7.3						3.2
11	300	7.8						3.3
12	280	8.6						3.2
13	295	8.8						3.2
14	280	8.9						3.3
15	265	9.7						3.4
16	230	8.4						3.6
17	220	6.6						(3.4)
18	210	6.7						(3.6)
19	200	(3.6)						(3.5)
20	220	2.9						---
21	230	2.8						---
22	250	2.6						---
23	260	2.9						(3.3)

Time: Local.
Sweep: 2.5 Mc to 20.0 Mc in 6 minutes.

Table 72*

Port Lockroy (64.8°S, 63.5°W) August 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.2						2.9
01	290	2.2						2.9
02	290	2.2						2.9
03	280	2.3						2.9
04	260	2.2						3.1
05	240	2.0						3.2
06	235	1.8						3.2
07	235	1.8					1.3	3.2
08	240	3.0					1.4	3.3
09	220	3.9			(120)	(1.7)	2.0	3.6
10	220	4.2						3.5
11	220	4.8						3.6
12	220	4.5						3.6
13	225	4.6						3.6
14	225	4.4						3.6
15	225	4.5						3.5
16	225	4.2						3.5
17	220	3.8					1.4	3.4
18	230	3.1						3.2
19	250	2.4						3.2
20	265	2.0						3.0
21	285	2.0						2.9
22	300	2.1						(2.8)
23	305	2.1						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.
*Average values except foF2 and fEs, which are median values.

TABLE 73

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h' F2 (Characteristic), Km (Unit), May (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. W. P., J. J. S.

Calculated by: E. J. W., J. W. P., J. J. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(270)	(270)	[270]	260	250	260	250	250	240	210	320	360	320	290	300	340	330	300	280	250	260	250	280	280
2	300	290	270	260	(280)	270	240	[250]	240	240	240	240	320	290	330	310	250	300	260	240	250	260	240	260
3	270	270	270	250	250	240	250	250	240	240	330	330	270	290	240	310	270	270	270	240	240	240	270	280
4	270	280	270	280	250	270	270	270	240	240	230	230	250	270	240	310	330	300	300	[280]	250	250	250	240
5	(270)		A	S	S	240	L	L	L	420	410	340	240	[270]	240	250	A	A	(280)	250	230	A	A	A
6	310	290	300	270	270	250	250	270	240	310	[330]	350	360	460	400	370	340	310	290	250	230	230	(250)	(260)
7	280	(270)	(280)	(280)	(280)	290	260	260	290	320	370	370	350	400	360	340	300	290	270	240	260	270	260	260
8	260	260	250	290	250	260	250	250	250	350	450	310	270	350	410	400	340	290	280	240	220	240	230	240
9	300	290	(270)	280	290	280	270	270	250	G	G	G	480	480	[400]	400	390	340	290	250	220	230	280	300
10	(300)	300	280	290	270	250	260	270	270	330	310	330	330	260	250	330	350	320	280	250	240	(230)	(260)	270
11	270	(300)	(290)	(270)	(280)	290	250	(340)	290	400	450	370	330	410	380	380	310	320	280	(250)	250	240	230	280
12	(290)	300	[310]	(320)	A	A	240	260	410	280	280	470	350	360	370	350	310	[290]	270	250	250	220	240	[270]
13	350	[300]	310	300	(290)	A	A	A	420	[340]	250	410	480	[460]	440	[390]	340	310	[280]	250	240	270	A	A
14	A	280	290	280	(280)	A	A	G	A	A	A	G	680	G	660	620	370	AK	AK	AK	(280)	(270)	260	280
15	260	260	280	260	270	250	360	340	340	330	330	370	270	290	410	410	330	290	290	250	250	250	280	290
16	270	(290)	(300)	S	S	270	290	420	410	520	340	340	370	350	330	340	360	330	280	260	(250)	[260]	(300)	(300)
17	350	(290)	[300]	(310)	[270]	270	[260]	260	330	350	360	320	340	370	340	290	310	290	280	240	(250)	240	240	240
18	290	290	320	[280]	(290)	260	320	T	A	320	280	360	510	470	420	360	340	330	270	A	A	A	(230)	280
19	A	A	330	[320]	290	240	270	360	410	[420]	430	380	520	410	320	310	330	300	300	260	260	250	250	240
20	270	(290)	280	(270)	290	240	290	270	410	520	350	450	G	490	470	400	350	290	260	(250)	(230)	220	(240)	(260)
21	(290)	(260)	(280)	S	S	(250)	290	420	320	(620)	490	410	350	330	290	420	340	[290]	290	(240)	(200)	(240)	(280)	(330)
22	(330)	(290)	(280)	(300)	(300)	240	(350)	340	400	300	350	460	440	420	360	420	330	310	(300)	(250)	(220)	(220)	270	(250)
23	(260)	270	(300)	[300]	(310)	290	300	320	280	320	A	A	G	340	A	A	350	M	M	M	M	230	250	(270)
24	(260)	M	A	(290)	[280]	(260)	450	480	420	330	320	A	670	470	660	530	340	300	270	240	220	250	[250]	[300]
25	270	270	260	270	270	240	(270)	300	350	400	350	[350]	410	360	380	370	380	300	[320]	240	[260]	(270)	270	280
26	270	A	A	A	A	M	350	[370]	A	M	440	350	420	360	A	M	M	A	270	[260]	240	240	250	260
27	(300)	280	300	290	(300)	330	L	350	330	A	M	380	320	450	380	410	370	M	M	240	210	210	240	270
28	(300)	(280)	(300)	M	A	240	230	320	320	350	410	[320]	330	380	420	380	330	290	250	[260]	240	260	250	250
29	250	250	270	(270)	250	310	480	450	420	330	350	410	460	450	470	400	400	350	290	250	240	220	250	260
30	280	310	270	[270]	310	290	320	350	240	400	330	330	370	390	420	370	330	320	290	250	230	220	240	260
31	280	270	270	290	[280]	270	430	410	270	300	380	350	370	440	[430]	420	370	320	(290)	250	(240)	210	230	(240)
Median	280	290	290	290	(280)	260	310	330	350	340	340	360	370	390	390	370	340	300	280	250	240	240	250	270
Count	29	27	28	28	25	27	27	29	28	28	28	29	31	31	29	29	29	26	28	28	29	29	29	29

Sweep 1.0 Mc to 25.0 Mc In 0.25 min

Manual ☐ Automatic ☒

TABLE 74

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1948

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), May (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W 75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W. J.W.P., J.J.S.

Calculated by: E.J.W. J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.7)$^{F}_{F}$	(2.5)$^{S}_{F}$	(2.6)$^{F}_{S}$	(2.2)$^{D}_{F}$	2.2	2.4	3.3	3.7	(4.1)^{S}	5.0	4.9	5.0	5.1	5.0	5.0	5.0	4.9	5.0	4.9	5.0	4.9	4.0	3.8	(3.3)$^{F}_{S}$
2	3.1	2.8	2.6	2.4	1.9$^{F}_{S}$	2.4	3.9	3.8	4.3	4.7	4.9	5.2^{H}	5.4	5.1	5.3	5.2	4.8	5.3	5.8	5.3	5.4	4.5	3.9	3.3
3	2.9	2.6	2.4	2.4	2.4	2.6	3.7	4.4	4.7	4.9	5.4^{H}	5.3	5.4	5.2	5.3	5.6	5.7	5.4	5.8	6.2	5.6	4.4	3.5	2.9$^{F}_{S}$
4	2.4$^{F}_{S}$	2.5$^{F}_{S}$	2.4$^{F}_{S}$	2.3^{F}	2.4^{F}	2.9$^{F}_{S}$	4.2^{H}	4.9	5.1	5.7^{H}	5.4	5.8	5.8^{H}	5.4	5.6	6.0	5.6	6.1	6.3	6.9	6.6	(5.4)$^{S}_{P}$	2.9^{F}	2.2
5	1.9	1.9^{S}	[1.8]^{A}	(1.7)$^{F}_{S}$	1.8	2.2	3.3	<3.4^{G}	<3.6^{G}	4.2	4.4^{S}	5.0	4.5	4.4	4.8	4.9	A	A	5.2$^{J}_{A}$	5.5	4.9	[3.9]^{A}	[3.3]^{A}	[2.6]^{A}
6	2.1^{F}	(2.3)^{F}	2.2^{F}	2.0	2.1^{F}	3.5^{S}	3.7^{S}	4.1	4.2	4.5	[4.7]^{C}	4.9	4.7	4.6	5.0	5.4	5.0	4.9	4.8	5.0	4.8	4.1	2.8	2.7
7	2.4$^{F}_{S}$	2.3	2.2	2.1	2.1$^{F}_{S}$	3.0	4.2	4.5	4.9	(4.8)$^{S}_{P}$	4.9	4.9	5.0	4.8	5.0	5.2	5.4	5.3	5.4	5.6	5.5	4.5	(3.7)^{S}	3.6
8	3.2	3.0^{F}	2.7^{F}	2.4	2.3	2.9	3.8	4.4^{H}	4.4^{H}	4.6^{H}	4.6	5.6	5.0	5.0	5.0	4.9	5.4	6.2	6.8	7.2	6.4	5.8	4.8	3.8
9	3.4$^{F}_{S}$	2.6^{F}	2.4	(2.1)$^{F}_{S}$	(1.9)$^{F}_{S}$	2.4	3.4^{H}	3.8^{H}	4.1	<3.9^{G}	<3.9^{G}	<4.0$^{G}_{K}$	4.4^{K}	4.4^{K}	4.4^{K}	4.6^{K}	4.5^{K}	4.8^{K}	4.9^{K}	5.2^{K}	4.8^{K}	3.3^{K}	2.5^{K}	2.3^{K}
10	^{K}(2.1)$^{F}_{S}$	(2.0)$^{F}_{S}$	(1.8)$^{F}_{S}$	(2.0)^{S}	2.0^{F}	2.9	4.1	4.9	4.9	5.0	5.1	5.3	5.4	5.0	5.2^{F}	5.1	5.2	5.6	6.6	7.0	(6.1)^{S}	4.6	3.8	3.5
11	3.0	2.7	2.5	2.3	1.9	2.4	3.2	3.7	4.1	4.3	4.5	4.7	4.9	4.7	5.0	5.0	5.5	5.2	6.1	5.9	5.2	5.0	3.4	2.5
12	2.5	2.4	[2.1]^{A}	1.9	[2.0]^{A}	(2.6)^{S}	3.6	4.2	4.4	5.4^{H}	5.0^{H}	4.6	4.9	5.1	5.0	5.1	5.2	[5.3]^{A}	5.4	5.6	5.7	4.8	3.8	2.9^{F}
13	2.9^{F}	[2.9]^{A}	2.8	2.3^{F}	1.9$^{F}_{S}$	A	A	A	4.3	[4.3]^{A}	4.9^{H}	4.8	4.5	[4.6]^{A}	4.7	[4.9]^{A}	5.1	5.6	[6.0]^{A}	5.9	5.6	4.3	[3.4]^{A}	[3.0]^{A}
14	2.7$^{F}_{S}$	2.5^{F}	2.3^{F}	2.3^{F}	1.9	A	A	<3.5^{G}	A	A^{K}	^{K}	<4.0$^{G}_{K}$	4.3^{K}	<4.1$^{G}_{K}$	4.2^{K}	4.4^{K}	4.5^{K}	[4.6]$^{A}_{K}$	[4.7]$^{A}_{K}$	[4.7]$^{A}_{K}$	5.0^{K}	4.2$^{F}_{K}$	3.7$^{F}_{K}$	3.4^{K}
15	3.1^{K}	2.5$^{F}_{K}$	2.3	2.3^{F}	(2.0)^{S}	2.8	3.6^{H}	4.4^{H}	4.4	4.7	4.9^{H}	4.9	4.9	4.9	4.8	4.9	5.1	5.3	5.8	6.5	6.1	4.8	4.2	3.6
16	2.9	2.1	1.9	1.8	1.8^{F}	2.5	<3.3^{G}	3.9	4.3	(4.3)^{S}	5.3	5.0	5.0	5.4^{H}	5.3	4.9	4.9	5.2	5.6	6.2	6.0	[4.6]^{A}	3.3	[2.8]^{A}
17	2.4	2.2	[2.0]^{A}	1.8	1.7	2.9	[4.3]^{A}	5.3	5.0	5.0	5.2^{L}	5.2	5.3	5.0	5.2	5.3	5.2	5.4	5.4	6.0	(6.0)^{S}	5.4	4.0^{S}	3.2
18	3.0	2.9^{F}	2.8	[2.4]^{A}	2.3^{F}	2.8	3.6	T	A	5.0	4.7	5.1^{H}	4.5	4.6	4.8	5.1	5.0	5.2	5.5	A	A	5.6	(3.6)$^{F}_{S}$	2.4$^{F}_{S}$
19	2.2	2.1^{F}	2.4	[2.3]^{A}	2.2	2.6^{F}	3.3	3.8	4.1	[4.3]^{A}	(4.5)^{S}	4.7	4.9	5.0	5.5^{H}	5.4	5.0	5.4	5.6	6.5	(6.1)^{S}	5.6	4.6$^{F}_{S}$	4.0
20	3.1	2.8^{S}	(2.5)$^{F}_{S}$	(2.1)$^{F}_{S}$	(2.6)$^{F}_{S}$	2.5	3.3	3.9	4.2	(4.5)$^{P}_{S}$	4.6	4.6	<4.2^{G}	4.8	4.7	4.9	5.4	6.3	6.6	(6.1)$^{P}_{S}$	5.5	4.5	(3.5)$^{P}_{S}$	(3.1)$^{P}_{S}$
21	(3.1)$^{F}_{S}$	2.8$^{J}_{S}$	(2.0)$^{P}_{S}$	S	S	2.5	3.3	3.6	4.3	(4.3)$^{P}_{S}$	<4.0^{G}	4.6	4.9	5.1	4.6^{H}	4.8	5.4	[5.9]^{A}	6.4	7.6	5.6	3.3	2.8	2.3
22	2.3	(2.3)$^{P}_{S}$	(2.1)$^{P}_{A}$	1.9	1.9	2.9	3.4	3.9	4.2	5.0	4.3	4.6	4.8^{H}	4.6^{H}	5.1	4.9	5.1	5.1	5.8	(6.1)^{S}	(6.4)$^{P}_{S}$	4.8	3.9	3.2
23	3.0	2.4	(2.0)$^{P}_{S}$	(1.8)$^{J}_{F}$	(1.9)$^{P}_{S}$	2.6	3.4	4.1	5.0	4.5	[4.3]^{A}	[4.4]^{A}	<4.1^{G}	4.6	[4.8]^{A}	4.9^{A}	4.7	M	M	M	M	3.7	3.2	2.6
24	2.5	[2.4]^{A}	(2.1)$^{P}_{A}$	(1.9)$^{P}_{S}$	(1.9)$^{P}_{S}$	2.8	3.4^{H}	3.6	(4.2)^{S}	4.7^{H}	4.7	[4.5]^{A}	4.3	4.5	4.3	4.8	4.9	5.1	5.2	5.2	5.0	4.0	[3.4]^{A}	(2.6)$^{F}_{S}$
25	(2.5)$^{F}_{S}$	2.5^{S}	2.5	2.3^{F}	2.3	3.2	4.1	4.3	4.9^{S}	5.0^{H}	5.6	[5.2]^{A}	4.9	4.9	4.8	4.7	4.8	5.4	[5.9]^{A}	6.0	5.8	4.8	3.6	3.1
26	2.9	A	A	A	A	A	3.5	[4.4]^{A}	[5.0]^{A}	[5.3]^{A}	(5.1)$^{J}_{S}$	4.9	4.8	4.7	(4.6)^{A}	[5.0]^{A}	[5.3]^{A}	[5.5]^{A}	5.8	[5.8]^{A}	(5.1)$^{J}_{S}$	(4.4)$^{J}_{S}$	3.8	3.3
27	2.9^{F}	2.6^{F}	(2.2)$^{F}_{S}$	(1.9)$^{F}_{S}$	1.8^{F}	2.6	3.9^{H}	3.8	4.5	A	A	5.0	5.0	4.6	4.8	4.6^{S}	4.8	[5.1]^{A}	[5.8]^{A}	6.6	6.0	4.6	3.1	2.6$^{F}_{S}$
28	(2.3)$^{F}_{S}$	2.3$^{F}_{S}$	(2.2)$^{F}_{S}$	A	A	3.3	4.3	4.5	5.0^{H}	5.0^{S}	5.4	[5.3]^{A}	5.2	4.8	4.7	4.9	5.3	6.2	6.2	(6.8)^{A}	6.0	4.5$^{F}_{S}$	4.2	3.4$^{F}_{S}$
29	3.2^{F}	2.9$^{F}_{S}$	2.4	2.0^{F}	2.2$^{F}_{S}$	(2.5)^{S}	3.3	4.0	4.2	4.8	4.9	4.7	4.6	4.5	4.7	4.8	4.9	4.9	5.3	5.8	5.8	4.9	3.8	3.1
30	3.1	2.8	2.4	(2.2)$^{A}_{S}$	2.0	3.0	3.9	4.4	4.9	4.9^{H}	5.3	5.1	5.0	5.2	4.7	5.0	5.0	5.1	5.7	6.1^{S}	6.2	5.2	3.7	3.0
31	2.7	2.6	2.5^{F}	2.3$^{H}_{F}$	(2.0)$^{J}_{S}$	3.0^{H}	3.5^{H}	4.9	5.5	5.0	4.9	5.0	4.9	4.7	(4.4)$^{J}_{S}$	4.5	4.9	5.3	[6.0]^{M}	6.4	6.3	5.0	3.7	3.0
Median	2.9	2.5	2.3	2.2	2.0	2.7	3.6	4.1	4.4	4.8	4.9	4.9	4.9	4.8	4.8	4.9	5.0	5.3	5.8	6.0	5.7	4.6	3.7	3.0
Count	31	30	30	28	28	28	29	29	29	29	29	31	31	31	31	31	30	29	30	29	29	31	31	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 75

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), May (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W. J.W.P., J.J.S.

Calculated by: E.J.W. J.W.P, J.J.S.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	(4.0)	(4.0)	(4.0)	(4.1)	(4.0)	4.1	3.9	<3.6	4.3	5.1	4.7	5.1	4.9	5.2	5.1	5.2	4.8	4.8	5.0	5.3	4.6	(4.6)	3.4	3.3
2	3.0	4.1	4.5	4.4	1.8	4.4	3.7	(3.8)	4.7	4.7	5.2	5.2	5.1	(5.1)	5.0	5.1	5.1	5.6	5.6	5.4	4.7	4.3	3.4	3.0
3	3.7	4.1	4.4	4.8	(2.1)	3.2	3.4	4.4	5.0	5.0	5.2	5.6	5.2	5.0	5.4	5.4	5.3	5.6	6.2	6.1	5.0	4.0	3.1	2.8
4	(2.5)	4.1	2.8	4.4	2.4	3.5	4.4	4.8	5.5	5.5	5.8	5.8	5.2	5.4	6.1	5.8	6.0	6.0	(7.0)	6.6	(6.2)	4.2	2.3	2.1
5	1.7	1.1	1.8	1.7	1.1	2.4	<3.4	<3.5	<3.7	4.5	4.6	4.6	4.5	4.8	[4.8]	4	4	A	5.3	5.4	4.4	3.3	3.1	(2.2)
6	4.2	4.4	2.1	4.1	4.1	3.2	4.1	4.3	4.5	[4.6]	4.7	4.8	4.5	4.8	5.4	5.2	5.0	4.7	4.9	4.1	4.5	3.3	2.7	2.5
7	4.3	4.4	4.1	4.0	4.2	3.8	4.5	4.7	4.7	4.3	4.8	5.0	5.0	5.0	5.2	5.2	5.3	5.4	5.4	5.8	4.9	4.2	3.7	3.5
8	3.0	4.8	2.5	4.3	4.4	4.6	4.0	4.4	4.8	<4.9	5.0	5.6	5.0	5.0	5.0	5.1	5.9	6.6	7.0	6.8	6.1	5.3	4.0	3.5
9	4.8	2.5	(2.2)	1.7	1.7	2.1	3.5	4.1	3.7	<3.1	<3.9	4.3	4.4	4.4	4.4	4.6	4.7	4.9	5.0	5.2	4.0	2.8	2.4	2.3
10	4.2	1.7	(1.7)	4.3	2.8	2.7	4.6	4.7	4.9	5.1	5.2	5.3	5.3	5.2	5.1	5.0	5.5	6.0	6.4	6.9	5.4	4.1	3.8	3.1
11	2.8	4.2	2.3	4.1	(1.1)	3.0	3.3	<3.5	4.1	4.4	4.5	4.5	5.0	4.7	4.7	5.4	(5.2)	5.5	6.2	5.8	5.0	4.2	3.0	2.5
12	4.9	2.3	4	4	(2.3)	4.2	4.0	4.1	4.7	5.1	4.5	4.8	4.7	5.0	4.4	5.2	(5.2)	5.2	[5.5]	5.8	5.3	4.3	[3.4]	3.0
13	4.7	3.7	4.5	4.1	4	4	4	4	[4.3]	4.3	4.1	4.8	4.8	(4.5)	5.0	A	[5.4]	6.0	6.0	5.7	4.8	(3.7)	[3.2]	2.8
14	4.7	4.5	4.4	4.1	[4.5]	4	3.3	4	—	4	4.4	4.3	<4.1	4.2	[4.3]	4.5	[4.6]	4.6	(4.7)	[4.7]	4.7	4.8	3.5	3.2
15	3.0	2.5	2.2	(2.1)	4.3	[3.3]	4.2	4.4	4.5	4.7	4.8	4.8	5.1	4.8	5.0	4.8	5.2	5.4	6.0	6.3	5.2	4.5	4.0	3.2
16	2.3	(2.0)	1.4	1.1	1.1	3.1	<3.6	4.3	4.4	4.4	5.2	4.7	5.1	5.2	5.2	4.8	5.0	5.4	6.4	6.3	5.2	[4.1]	3.0	(2.6)
17	4.3	[4.0]	(1.1)	1.1	(4.0)	3.6	[4.3]	5.0	5.2	5.2	5.2	5.3	5.2	5.3	5.2	5.1	5.3	5.1	5.8	6.0	6.2	4.7	(3.5)	3.0
18	4.8	4.8	(4.6)	4.3	4.4	3.2	3.7	[4.1]	4.5	5.0	5.2	4.8	4.4	4.8	5.1	5.3	5.0	5.3	5.6	[5.8]	6.0	[4.6]	(2.6)	2.3
19	2.2	4.4	4	4	2.4	3.0	3.5	4.0	(4.2)	<4.1	4.7	4.0	4.4	5.3	5.5	5.3	5.1	5.6	6.0	6.3	6.0	6.0	4.2	3.5
20	2.9	(2.5)	4.4	4.2	4.2	3.0	3.7	4.0	(4.3)	(4.5)	4.5	4.6	4.7	4.7	5.0	5.2	6.0	6.4	(6.2)	(5.1)	(5.2)	4.0	3.2	2.8
21	(4.4)	4.4	3	3	3.0	(3.5)	<3.6	(4.2)	4.4	(4.4)	4.6	4.7	4.9	4.7	4.8	5.2	5.3	5.6	7.0	6.8	4.5	2.9	2.4	2.3
22	2.3	4.2	(4.0)	[4.1]	2.2	3.3	[3.5]	(4.1)	4.4	4.4	4.6	4.7	4.8	4.9	(5.0)	5.0	5.3	(5.1)	6.1	6.6	5.3	4.6	3.6	3.1
23	(4.7)	4.4	(2.0)	(4.1)	2.3	3.2	4.0	4.4	4.5	(4.3)	[4.4]	4.4	4.6	[4.6]	4.7	[5.0]	5.2	M	M	M	4.0	3.2	2.8	2.6
24	2.5	(2.3)	[1.8]	[1.4]	(1.2)	3.0	4.1	3.1	4.6	4.7	4.3	[4.4]	4.5	4.5	4.5	4.4	4.1	5.3	5.2	5.2	4.5	3.5	(3.1)	(2.5)
25	2.5	2.5	2.4	2.2	[2.4]	3.7	(4.5)	4.5	5.2	5.3	5.3	5.0	4.4	5.1	4.7	5.0	5.2	5.1	6.1	6.4	5.5	4.3	3.2	3.0
26	A	A	4	4	4	3.3	[4.0]	4.7	[5.0]	(5.3)	5.1	5.3	4.5	[4.6]	[4.4]	(5.2)	[5.4]	5.6	[5.7]	5.4	(5.1)	(4.0)	3.6	3.4
27	2.7	(2.3)	2.0	1.4	2.2	3.2	<3.3	4.3	4.7	A	4	4.4	4.4	4.6	4.5	4.4	4.1	[5.5]	6.1	6.5	5.2	3.5	2.7	2.4
28	(4.3)	4.4	4	4	4	3.6	4.3	4.4	(5.3)	5.3	[5.3]	5.3	4.4	4.8	4.8	5.1	5.8	6.3	6.7	6.3	5.4	4.3	3.6	3.3
29	(3.0)	[2.7]	2.2	(4.1)	(4.1)	2.9	3.7	(3.7)	4.3	4.8	4.9	4.7	4.6	4.6	4.8	5.3	4.6	5.1	5.6	6.0	5.4	4.3	[3.4]	3.1
30	2.7	2.5	[2.3]	2.0	2.2	3.5	4.4	4.3	5.0	5.8	5.3	5.3	4.8	5.0	5.0	5.3	5.0	5.3	5.8	6.0	5.8	4.4	3.3	(2.6)
31	2.5	2.6	4.1	2.1	2.3	3.4	3.1	3.2	5.0	(4.8)	4.8	4.7	5.0	(4.5)	4.6	4.7	5.0	5.5	[6.0]	[6.4]	5.7	4.4	3.4	(2.6)
Median	2.7	4.4	4.2	4.1	4.1	3.2	3.1	4.3	4.6	4.7	4.8	4.8	4.4	4.8	5.0	5.1	5.2	5.5	5.9	6.3	5.2	4.2	3.3	2.8
Count	30	29	29	29	27	27	31	27	30	27	30	31	31	31	31	27	30	29	30	30	31	31	31	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 76

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), May (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P, J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							210	210	230	200H	200	200H	190	230	210	220	250	A	A					
2							210	210H	210H	230	200	210H	220	220H	220	200H	[200]A	190H	230					
3							210	210	200H	200H	200H	210H	190H	230	200H	240	(240)3	220	A					
4							240	230	240H	[220]A	210	200H	190H	200	190H	(260)A	240H	260	250					
5							240	220H	220H	210	200	190	180	210H	A	A	A	A	A					
6							210H	200H	200	(250)A	[250]2	(250)A	210H	210	190	A	A	A	200					
7							A	(250)A	A	A	200H	[210]A	220	[220]A	220	210H	220H	230	230					
8							220	200H	200H	200H	200	200H	220	210	210	200H	220	240	240					
9							250	230H	200H	200H	200H	210HK	200HK	180HK	220HK	240K	240K	AK	AK					
10							220	210H	210H	210	200H	[200]A	200	190H	210H	210	230	A	A					
11							220	220	200H	210	210H	200	[220]A	240	(250)A	A	A	A	A					
12							A	230	[220]A	220	230H	210H	A	A	A	A	A	A	A					
13							A	A	A	A	210	190H	190H	[200]A	220H	A	A	A	A					
14							A	(220)A	A	AK	AK	(200)AK	190HK	200HK	(210)AK	220K	AK	AK	AK					
15							210H	180H	210H	210	190H	200	190	200	260	220	220	(230)A	A					
16							230	220H	[210]A	200	200	200H	210H	200H	190H	210	(210)A	A	A					
17							A	A	200	A	A	210H	190	190	220	[220]A	220H	210H	A					
18							A	T	A	200	200	200	210	190	200H	190H	220	210	(270)A					
19							220	220H	A	A	A	A	190	210	220H	210	200H	(180)H	240					
20							220	210	210	200	220	180H	200	200H	210	200H	240	230	A					
21							220	210	(220)A	190H	180H	200	200H	190	200	220	210	250	A					
22							210	200	210	200H	190	190H	210	190	220	A	A	(230)A	A					
23							220	200H	(200)A	210H	A	A	170H	A	A	A	A	M	M					
24							220	210	210	200H	190H	[190]A	190H	[200]A	220	220	[230]A	(240)A	210					
25							A	(210)A	210H	180H	200	[200]A	200	180H	[200]A	220	A	A	A					
26							220	A	A	A	200H	200H	200	A	A	A	A	A	A					
27							210	210	A	A	A	A	200H	[200]A	200	210	A	A	A					
28							220	220	A	A	A	A	190H	170H	180H	220	220	A	A					
29							280H	[250]A	220H	210	210	(210)A	210H	220H	200H	230	220	240	A					
30							230	210	[210]A	210H	200H	200H	210H	200H	[220]A	240A	230	A	A					
31							(240)A	230	[200]A	180H	170H	200H	210H	190H	210H	220	230	A	M					
Median							220	210	210	200	200	200	200	200	210	220	220	230	240					
Count							24	27	2	23	25	27	30	28	27	23	20	14	8					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 77

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form accepted June 1946

IONOSPHERIC DATA

f°F1 (Characteristic), Mc (Unit), May (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W. J.W.P., J.J.S.

Calculated by: E.J.W. J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	3.4	3.7	4.0	4.1	4.2	4.1	4.2	4.2	4.0	3.4	A	A					
2							L	L	3.4	3.4	4.0	4.1	4.2	4.2	4.2	(3.4)	3.8	3.6	3.6					
3							L	3.5	3.6	4.1	4.1	4.1	4.2	4.2	—	4.1	3.8	3.5	L					
4							L	3.5	3.4	4.2	4.2	4.1	4.3	4.2	4.2	4.1	3.4	3.6	3.1					
5							L	3.4	3.6	4.1	4	4.1	4.1	4.1	[4.4]	4.0	A	A	A					
6							3.2	3.5	3.4	4.0	[4.1]	4.2	4.2	4.1	4.0	4.0	3.8	[3.4]	3.0					
7							A	3.5	3.8	4.0	4	4	4.2	4.2	4.2	4.1	3.4	3.6	L					
8							L	3.6	3.4	4.3	4.3	4.2	4.3	(4.3)	4.3	4.0	3.8	3.6	3.1					
9							3.3	3.4	3.7	3.4	3.4	4.0	4.0	4.0	4.1	3.4	3.8	3.5	A					
10							L	3.6	3.8	4	4.1	4	(4.2)	4.2	4.1	4.0	3.8	3.6	A					
11							L	3.4	3.6	3.9	4.0	4.1	4.2	4.2	4.2	A	A	A	A					
12							3.1	3.5	3.8	4.0	4.1	4.3	4.3	4	A	A	A	A	A					
13							A	A	3.4	[4.0]	4.0	4.0	4.2	[4.2]	4.1	A	A	A	A					
14							A	3.5	A	A	A	4.0	4.1	4.1	4.0	3.4	3.8	A	A					
15							3.2	(3.5)	3.8	(4.1)	4.1	4.1	4.2	4.2	4.2	4.0	3.8	3.6	A					
16							3.3	3.6	3.9	4.0	4.0	4.3	(4.2)	4.2	4.1	4.1	3.4	3.4	A					
17							A	3.4	3.8	[3.8]	3.9	4.2	4.2	4.2	4.1	[4.0]	3.4	3.5	L					
18							3.2	T	A	4.0	4.0	4.2	4.2	(4.1)	4.1	4.0	3.4	3.4	3.2					
19							3.1	3.5	3.8	A	A	4.1	(4.3)	4.1	4.1	4.0	3.4	3.8	3.2					
20							3.1	3.5	3.7	3.9	4.0	4.1	4.2	4.0	4.1	4.0	3.8	3.6	A					
21							3.1	3.5	3.6	3.9	4.0	3.9	4.1	4.0	4.0	3.9	3.8	3.6	A					
22							(3.2)	3.5	3.7	3.9	4.1	4.2	4.2	4.1	4.0	[3.4]	3.8	3.4	A					
23							3.3	3.6	3.7	3.9	A	A	4.1	(4.1)	A	A	A	A	M					
24							3.1	3.4	3.7	4.0	4.1	[4.1]	4.1	4.1	4.1	4.0	[3.4]	3.6	3.2					
25							A	(3.8)	4.0	4.1	4.1	[4.0]	4.3	4.2	4.2	4.0	3.9	A	A					
26							3.2	A	A	A	4.0	4.2	(4.1)	A	A	A	A	A	A					
27							L	3.5	3.8	A	A	A	4.0	4.2	4.1	4.0	A	A	A					
28							L	3.6	3.4	4.0	A	A	4.0	4.3	4.2	4.0	3.9	3.6	L					
29							3.2	3.6	3.8	4.0	4.1	4.2	4.3	4.1	4.1	3.4	3.8	3.6	3.2					
30							3.3	3.4	3.9	4.0	4.2	4.2	4.3	4.3	4.2	4.0	3.4	3.6	3.3					
31							3.2	3.6	[3.8]	4.0	(4.1)	4.1	4.2	4.2	4	4.0	3.8	3.7	M					
Median							3.2	3.5	3.8	4.0	4.1	4.2	4.2	4.2	4.1	4.0	3.8	3.6	3.2					
Count							16	27	28	27	26	28	31	27	28	26	24	21	9					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 78

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), May (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1							120	120	110	110	110	100	100	100	110	100	110	110	120							
2							S	110	110	110	100	100	(100)^{A}	100	100	(100)^{A}	110	110	110							
3							(110)^{S}	110^{H}	110	110	110^{H}	100^{H}	100	100	100	100	100	110	S							
4							120^{H}	110	110^{H}	110	110	100	100	100	100	100^{H}	110^{H}	110^{H}	120							
5							(130)^{S}	110^{H}	110^{H}	110	100	100	100	110	110	110^{B}	110^{H}	110	120							
6							A	110	110	110	[10]^{C}	110	110	110	110	110	110	110	S							
7							S	110	110	110	100	100	100	100	100	100	110	110	(120)^{S}							
8							110^{H}	110^{H}	100	110	100	100	100^{H}	110	110^{H}	110	110^{H}	110	(120)^{S}							
9							S	110	110^{H}	110	100	100^{K}	100^{K}	100^{K}	100^{K}	110^{K}	110^{K}	110^{K}	120^{K}							
10							120	110	110	110	110	110	100	110	110	110	110	110	(110)^{S}							
11							S	110	100	100	100	110	100^{H}	100	100	100	110	110	120							
12							(120)^{S}	110	110^{H}	100^{H}	100^{H}	100^{H}	100^{H}	100	100	100	100	120	110							
13							(110)^{S}	110^{H}	100	100	100	100	110	100	110^{H}	110	110	120	120							
14							(120)^{S}	110^{H}	110	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	110^{K}	100^{K}	110^{K}	120^{K}							
15							A	A	100	100^{H}	100	100^{H}	100	100	100	110	110	110	120^{H}							
16							120	110	100	100	100	100	100	100^{H}	100	100	100	100	120							
17							120^{H}	110^{H}	100	100	100^{H}	100^{H}	A	A	A	100	100	110	120^{S}							
18							120^{S}	[10]^{T}	100	100	100	100	100	100	100	100	(110)^{B}	110	(120)^{B}							
19							110^{S}	110	100	100^{H}	100	100	100	100	100	(100)^{B}	110	110	110							
20							A	A	100^{H}	100^{H}	100	100	100^{H}	100	(110)^{B}	(110)^{B}	(110)^{B}	110^{H}	(110)^{S}							
21							(120)^{S}	110^{H}	100	100	100	[10]^{A}	100^{H}	100	100	100	100	100	110							
22							S	110^{H}	100	100^{H}	(100)^{B}	100	100	100	110	100	100	110	(100)^{S}							
23							(120)^{S}	100^{H}	100	100^{H}	100^{H}	100	100	(100)^{B}	100^{H}	100	M	M	M							
24							(110)^{S}	110	100	100	100	100	100^{H}	100^{H}	100	100	110^{B}	110	110							
25							110	110	100	100	100	100	100	100	100	100	100	100	110							
26							110	100	100	100	100	100	100	100	100	100^{H}	110	110	110							
27							110	100	100	100	100	100	100	100	100	100	100	110	110							
28							110^{H}	100	100	100	100	100	100	100	100	100	100	110	110							
29							120	110	110	110	110	110	100	110	100	110	110	110	110							
30							120	110	110^{H}	100	100	100	100	110	100	100^{H}	110^{H}	110^{H}	110^{H}							
31							110^{H}	110	110	100	110	(110)^{B}	100^{H}	[10]^{A}	110	110	110	110	M							
Median							120	110	100	100	100	100	100	100	100	100	110	110	110							
Count							23	29	31	31	31	31	30	30	30	31	30	30	27							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 79

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°E (Characteristic), Mc (Unit), May (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W. J.W.P., J.J.S.

Calculated by: E.J.W. J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							1.7	2.3	2.7	2.8	2.8	(2.9)^{F}	[3.0]^{A}	3.2^{H}	A	A	B	2.5	5					
2							1.8^{H}	2.1^{H}	2.6	2.8	2.8	[3.2]^{A}	3.2^{H}	3.2	[3.1]^{A}	(3.0)^{A}	(2.8)^{F}	2.4	1.9					
3							1.9^{H}	2.4^{H}	2.8	2.9	3.1^{H}	3.1^{H}	3.2	3.1^{S}	(3.0)^{S}	[2.9]^{A}	(2.8)^{S}	2.2	5					
4							1.8^{H}	2.3	2.6^{H}	2.9	3.0	3.0	[3.1]^{A}	3.2	3.0	2.9^{H}	2.6^{H}	2.4^{H}	1.9					
5							1.7	2.2^{H}	2.6^{H}	2.8	(3.0)^{A}	A	A	3.0	2.9	(2.1)^{B}	2.7^{H}	2.4	(1.8)^{F}					
6							A	A	(2.6)^{A}	2.7	[2.8]^{C}	3.2^{H}	[3.0]^{A}	3.2	3.1	(2.9)^{F}	2.7	2.9	A					
7							A	2.4	2.6	2.6	2.8	(2.9)^{H}	A	A	—	A	2.8	2.4	2.0					
8							1.8^{H}	2.4^{H}	A	A	3.0	3.2	3.2^{H}	3.2	3.1^{H}	3.0	2.8^{H}	2.5	2.0					
9							A	2.1	2.6^{H}	[2.8]^{A}	2.9	3.2^{H}	(3.2)^{F}	3.2^{K}	3.1^{K}	2.9^{K}	2.7^{K}	2.4^{K}	1.9^{K}					
10							1.8	(2.3)^{F}	2.6	2.7	(2.8)^{A}	3	A	A	3.1	3.0	2.7	2.4	(1.9)^{A}					
11							5	2.2	2.5^{S}	2.7	3.0	3.0	3.2^{H}	3.2^{H}	3.0	2.9	2.7	2.4	1.8					
12							1.7	2.3	2.6^{H}	2.9^{H}	3.1^{H}	3.1^{H}	3.2^{H}	3.1	3.0	(2.9)^{A}	2.1	2.5	1.9					
13							1.8	2.3^{H}	2.5	2.6	2.7	A	A	A	3.3^{H}	3.1	2.8	2.4	1.9					
14							(1.8)^{A}	2.3^{H}	2.6	A^{K}	A^{K}	A^{K}	A^{K}	A^{K}	3.2^{K}	3.0^{K}	2.8^{K}	2.5^{K}	2.0^{K}					
15							A	A	2.6	2.8^{H}	3.0	3.1^{H}	3.2	(3.1)^{A}	(2.9)^{A}	(2.8)^{A}	2.8	2.5	1.9^{H}					
16							1.8	2.4	2.7	2.9	2.8	3.1	3.0	3.2^{H}	(3.1)^{F}	A	A	A	A					
17							1.9^{H}	2.4^{H}	2.6	2.8	2.9^{H}	3.1^{H}	A	A	A	3.0	2.8	2.3	(1.8)^{B}					
18							1.8	[2.3]^{T}	2.6	2.7	2.8	2.8	[3.3]^{A}	(3.2)^{A}	[3.1]^{A}	3.0	(2.7)^{B}	2.5	(2.0)^{B}					
19							2.0	2.4	2.7	2.9^{H}	3.0	3.1	3.0	2.9	(2.7)^{F}	2.5	[2.5]^{A}	2.5	2.1^{S}					
20							A	A	2.7^{H}	2.8^{H}	(2.9)^{F}	(2.9)^{B}	3.0^{H}	(3.0)^{F}	(3.1)^{F}	3.0	(2.9)^{B}	2.6^{H}	2.6					
21							(1.8)^{A}	2.2^{H}	2.5	(2.8)^{A}	A	A	(3.1)^{F}	[3.0]^{B}	3.0	2.8	2.8	2.5	A					
22							5	2.3^{H}	2.5	2.8^{H}	(3.0)^{A}	3.0	(3.2)^{F}	[3.1]^{A}	(3.0)^{F}	3.0	(2.7)^{A}	(2.5)^{S}	(2.1)^{H}					
23							2.0^{H}	2.4^{H}	(2.6)^{A}	2.7^{H}	2.9^{H}	3.0	(3.1)^{F}	[3.1]^{B}	3.1^{H}	3.0	M	M	M					
24							(1.8)^{H}	A	A	(2.9)^{F}	3.2	3.2	(3.2)^{F}	(3.2)^{F}	[3.1]^{S}	3.0^{H}	2.8	2.4	1.8					
25							1.9	2.3	2.6	A	A	A	A	A	A	3.0	2.9	2.5	2.0^{H}					
26							2.2^{H}	2.4	2.8	3.0	3.0	3.0	3.2	3.0	[3.0]^{A}	3.0^{H}	2.8	2.5	2.0					
27							1.7	2.3	2.8	2.8	3.0	(3.0)^{A}	(3.2)^{A}	[3.2]^{A}	3.2^{H}	2.9	(2.8)^{F}	2.5	1.8					
28							1.8^{H}	2.3	2.5^{S}	2.8^{H}	A	A	A	3.1	3.2	3.1	2.9^{H}	2.5	1.8					
29							1.9^{H}	2.5	2.6	A	A	A	3.3	3.1	A	A	A	(2.6)^{F}	1.9					
30							2.1	2.4	2.7^{H}	2.8	2.8	A	A	A	A	2.9^{H}	3.0^{H}	2.6^{H}	2.1^{H}					
31							1.9^{H}	2.4	2.7	2.8	3.0	3.2^{H}	3.2^{H}	(3.2)^{A}	3.1	3.1	2.9	2.5^{H}	M					
Median							1.8	2.3	2.6	2.8	3.0	3.0	3.2	3.2	3.1	3.0	2.8	2.5	1.9					
Count							24	27	29	27	26	22	22	24	25	27	27	29	24					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 80

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1948

IONOSPHERIC DATA

Es (Characteristic), Mc,Km (Unit) May (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Lang 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W. J.W.P., J.J.S.

Calculated by: E.J.W. J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	2.7 120	2.5 120	2.7 110	2.6 130	4.1V 120	3.1 110	4.1V 110	4.4 110	3.4 100	G	3.3 110	4.4 110	4.2 110	5.0 120	6.8 120	3.6 120	5.8 120	3.8 110	3.5 110	E
2	3.2 110	4.6 110 H	3.4 110	2.7 110	2.9 110	E	2.9Y 110	4.7Y 100	4.0 110	4.3 110	4.3Y 100	4.1 100	3.9 100	G	3.4 110	3.8 100	4.8 110	3.6 110	G	3.3 100	4.3 100	4.1 100	E	E
3	E	3.4 100	E	3.3 100	3.9 100	E	G	G	G	4.0 120	4.4 110	3.3 110	G	G	G	3.8 108	G	3.1 110	3.8 120	3.3 120	4.8 100 H	4.0 100 H	4.1 120	3.3 120
4	2.2 100	3.4 100	2.5 100	2.5 100	2.3 100	3.8 120	2.4 130	3.8 120	4.1 120	5.8 110	4.0 110	5.1 110	4.3 108	G	G	G	G	4.0 136	3.9 120	8.4 110	4.8 110	3.8 110	4.8 110	3.7 110
5	E	E	3.6 130	3.1 130	3.2 120	4.3 120	3.1 130	3.9 120	3.7 120	11.0 120	3.2 120	4.4 110	4.2 110	G	5.6 110	4.5 140 H	8.4 120	7.6 120	8.0 120	9.8 110	5.4 110	7.8 110	10.5 110	6.8 100
6	4.0 100 H	2.9 110	E	3.0 110 S	E	E	5.8 110	8.0 110	4.7 110	4.3 110	C	5.4 110	4.5 110	4.4Y 120	G	3.5 120	4.5 120	4.3 120	3.3 120	E	E	E	E	2.4 128
7	2.9Y 120	2.4 120	4.1 110	3.3 110 H	2.6Y 120	4.2 110	3.8 110	5.8 110	4.5 110	4.8 110	4.2 110	5.0 110	4.5 110	4.9 100	3.6 110	3.1 100	G	3.9 120	2.3 120	2.0 120	4.7 110	4.2 110	2.8 110	2.7 110
8	E	2.5 110	E	2.9 110	3.3 100	6.6 110	1.9 120	4.5Y 100	3.4 110	3.8 110	G	G	G	G	G	G	G	G	G	E	E	E	E	E
9	E	E	E	E	E	E	1.8 110	3.2 120	3.3 120	3.2 110	3.2 128	G	G	G	G	G	3.3 130	4.2 120	4.5 110	3.0 110	E	E	E	E
10	E	E	E	E	4.7Y 120	2.8 110	3.2 110	G	3.7Y 120	2.9 120	7.0 110 H	4.7 110	3.1 100	3.2 110	G	G	4.0 130	4.3 120	4.7 120	3.7 110	E	E	E	E
11	E	E	E	E	E	E	2.1 120	2.6 120 H	7.2Y 110	2.9 110	G	3.1 110	3.9 120	G	3.7 130	4.9 120	5.5 120	5.0 110	4.9 110	5.8 110	3.5 110	3.1 110	3.0 110	2.6 110
12	E	E	3.8 120	3.3 120	4.0 110	3.5 110	3.7 120	4.0 120	5.8 110	5.2 110	3.3 110	4.7 110	4.8 110	12.5 110	10.6 110	5.8 110	6.2 120	7.0 120	5.6 110	9.0 100	4.3 100	2.3 110	4.3 100	3.8 100
13	4.5 100	4.7 100	3.7 100	3.2 110 H	7.6 110	6.6 100 H	7.6 110	7.0 110	7.2 100	6.6 100	6.6 100	4.2 110	3.7 110	6.3 110	G	6.0 130	7.0 120	8.4 110	7.8 110	5.0 110	5.0 110	6.8 100	6.4 100	8.4 108
14	5.4 100	2.9 100	2.9 100	2.8 100	3.5 110	4.0 110	4.2 110	7.2 100	10.5 100	11.2 100	12.7 100	4.6 100	3.2 110	4.4 110	10.5 110	6.8 110	5.5 120	6.9 110	5.8 110	7.4 110	5.8 110	5.1 110	4.5 100	5.0 108
15	2.7 100	E	E	E	2.9 120	3.2 110	3.0 110	3.4 108	G	3.5 110	G	G	G	3.5 110	3.3 110	3.8 110	3.2 130	3.9 130	4.8 110	3.8 110	4.2 110	3.5 110	3.7 110	2.3 110
16	E	E	E	E	E	3.3 120	2.9 120	G	4.6 110	4.8 100	4.5 110	3.3 110	3.2 110	G	G	4.3 100	4.3 100	4.9 110	5.1 110	5.4 110	4.1 110	7.6 110	6.8 100	7.0 100
17	4.1 100	3.9 100	4.0 100	3.1 100	3.9 100 H	3.1 120	7.0 110	4.5 110	5.0 110	6.6 110	5.5 110	5.2 110	3.5 100	5.4 100	4.2 100	6.3 110	4.1 110	3.0 110	3.7 120	4.0 110	3.8 110	2.6 110	E	4.3 110
18	3.0 110	2.8 110	5.0 100	5.0 100	3.4 120	2.9 130	4.0 120	T	7.0 110	4.2 110	4.1 110	3.4 110	4.0 110	3.9 110	4.3 100	G	G	G	3.8 120	8.6 110	7.2 110	5.2 110	5.0 110	7.0 110
19	6.8 100	4.8 100	4.0 100	3.9 100	1.7 100	E	3.1 110	G	4.4 120	4.8 110	5.0 110	4.6 110	3.6 110	3.4 110	3.3 110	3.0 110	3.0 110	G	3.8 130	3.2 120	4.5 110	4.8 110	4.2 110	3.3 110
20	3.0 100	4.0 100	5.2 110	E	4.1 100	3.0 100	2.0 110	3.3 110	3.8 120	4.4 110	G	4.3Y 110	G	G	G	G	G	3.0 140	4.7 120	4.8 110	3.0 110	3.0 110	2.4 110	E
21	E	E	E	2.5 110	S	E	3.3 120	3.6Y 110	3.1 110	3.1 120	3.0 100	3.1 100	G	G	G	G	G	7.0 120	4.2 120	5.5 110	4.9Y 110	4.3Y 110	E	2.8Y 110
22	E	E	3.0 120	2.6Y 120	3.1 120	3.1 110	3.0Y 120	2.7 120	7.6 100	4.4 110	4.3Y 110	3.8Y 110	G	4.1V 110	3.4 120	5.6 120	8.0 110 H	3.9 130	5.5 120	5.0 110	3.9 110	E	E	E
23	E	E	E	E	2.3Y 120	E	G	3.5Y 110	4.3 110	5.7 110 H	5.3 110	5.4 110	G	5.0 140	7.0 130	6.6 120	5.6 120	M	M	M	M	E	2.9Y 110	3.7 110
24	E	3.8 120	7.4Y 120 H	7.2Y 110 H	5.0 110	2.9Y 120	3.3 120	4.1 110	5.6 110	5.0 110	4.3 120	10.5 110	7.8 110 H	5.0 130	G	G	4.8 110	7.6 110	3.7 110	3.7 110	4.4 110	3.1 100	5.0 100	4.4 100
25	2.5 110	E	E	2.9 120	4.3 110	3.0 110	5.2 110	5.2 100	3.6 110	4.3 100	7.4 100	8.4 100	4.4 100	3.6 100	4.7 100	5.2 120	4.5 120	5.5 110	6.8 110	5.0 110	6.0 110	5.4 100	2.5 110	3.0 110
26	2.9 110	7.4 100	4.4 100	6.7 100	5.8 100	4.3 100	3.4 120	5.8 110	7.4 110	6.2 100 H	5.3 110	5.6 110	5.4 110	7.8 110 H	7.0 100	9.0 110	7.6 110	13.0 110	8.0 110	9.8 110	3.8 110 H	4.2 110	3.9 110	3.0 100 H
27	4.0 100 H	7.2Y 100	7.6 110 H	E	E	2.6 110	3.9 110	3.8 110	5.0 110	6.7 100	8.0 100	6.6 100	7.4 100	5.0 100	G	4.5 120	5.2 120	7.4 110	15.0 110	7.0 100	3.9 100	2.5 100	E	3.3 100 H
28	5.8 100	3.9 100	5.4 100	4.2 100	3.7 100	4.0 100	3.0 120	5.3 100	5.7 100	7.4 100 H	6.0 100	12.5 90	4.0 100	3.4 110	G	G	4.0 110	4.4 110	5.4 110	11.8 110	7.0Y 110	3.8 110	3.1 110	2.7 110
29	2.4Y 110	5.2 110	4.2 110	E	3.0 110	E	2.9 120	4.8 120	4.0S 110	4.4 110	5.0 110	4.5 110	4.0Y 100	G	4.0 100	3.9 110	3.7 110	G	3.8 120	3.2 110	3.2 110	2.5V 110	4.3 110	5.7 110
30	3.5 110	4.3 110	E	4.1 100	3.0 100	E	7.6V 100	3.6 120	4.2 110	4.2 110	5.0 110	3.4 100	4.2 100	4.5 100	5.4 100	G	G	4.2 120	4.0 120	3.8 110	3.0 110	E	E	E
31	3.5 100	E	E	3.2 120	3.6 120	6.0Y 110	3.5 120	3.7 120	6.8 110	5.4 110	G	G	G	4.9 100	6.4 120	G	G	4.4 120	M	3.7 120	5.8 110	E	E	E
Median	2.5	2.8	2.9	2.9	3.2	3.0	3.1	3.8	4.4	4.4	4.3	4.4	3.7	3.5	3.3	3.8	4.1	4.3	4.7	4.4	4.3	3.5	3.0	3.0
Count	31	31	31	31	30	31	31	30	31	31	30	31	31	31	31	31	31	30	29	30	30	31	31	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 81

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(MI500)F2 (Characteristic) , ____ (Unit) May (Month) , 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat. 38.7°N , Long. 77.1°W

75° W Mean Time

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(1.9)$^{S}_{F2}$	(1.9)$^{F}_{S}$	(2.0)$^{F}_{S}$	(2.3)$^{S}_{F}$	2.2	2.3	2.3	1.9	(1.9)^{S}	2.2	2.3	2.0	2.2	2.0	2.1	2.1	2.1	2.3	2.3	2.3	2.2	2.0	2.0	(2.1)$^{F}_{S}$
2	1.9	2.0	2.2	2.2	2.2$^{F}_{S}$	2.2	2.3	2.4	2.0	1.9	2.1	1.8^{H}	2.3	2.1	2.2	2.1	2.1	2.2	2.3	2.2	2.2	2.1	2.2	2.1
3	2.1	2.0	2.1	2.1	2.2	2.3	2.4	2.4	2.4	2.1	2.2^{H}	2.2	2.4	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.2$^{F}_{S}$
4	2.2$^{F}_{S}$	2.2$^{F}_{S}$	2.2$^{F}_{S}$	2.3^{F}	2.4^{F}	2.3$^{F}_{S}$	2.4^{H}	2.4	2.0	2.1^{H}	2.2	2.2	2.1^{H}	2.0	1.9	2.1	2.0	2.0	2.0	2.1	2.1	(2.4)$^{S}_{F}$	2.3^{F}	2.0
5	1.9	1.9^{S}	A	(1.9)$^{F}_{S}$	1.9	2.0	2.2	G	G	1.9	1.9^{S}	2.2	1.9	~	2.0	2.1	A	A	J^{A}	2.3	2.2	A	A	A
6	2.3^{F}	(2.2)^{F}	2.1^{F}	2.2	2.3$^{F}_{S}$	2.3^{S}	2.2^{S}	2.4	1.9	2.3	C	2.1	2.1	1.8	1.7	2.2	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.1
7	2.0$^{F}_{S}$	2.0	2.0	2.1	2.1$^{F}_{S}$	2.3	2.4	2.2	2.3	(2.3)$^{S}_{F}$	2.1	2.0	2.1	1.9	2.0	2.1	2.2	2.2	2.2	2.2	2.3	2.2	(2.2)^{S}	2.2
8	2.1	2.1^{F}	2.2^{F}	2.2	2.1	2.3	2.3	2.3^{H}	2.1^{H}	2.1^{H}	1.8	2.2	2.0	2.1	1.8	1.9	2.3	2.1	2.0	2.2	2.1	2.1	2.2	2.1
9	2.1$^{F}_{S}$	2.3^{F}	2.1	(2.1)$^{F}_{S}$	(2.1)$^{F}_{S}$	2.2	2.1^{H}	1.9^{H}	2.2	G	G	G^{K}	1.8^{K}	1.8^{K}	1.7^{K}	1.9^{K}	1.7^{K}	2.0^{K}	2.2^{K}	2.2^{K}	2.3^{K}	2.3^{K}	2.0^{K}	2.0^{K}
10	^{K}(2.0)$^{F}_{S}$	(2.0)$^{F}_{S}$	(2.2)$^{F}_{S}$	(2.1)^{S}	2.1	2.4	2.3	2.4	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.1	2.2	(2.2)^{S}	2.1	2.0	2.0
11	1.9	1.9	2.0	2.0	2.1	2.2	2.4	2.2	2.0	2.0	1.8	2.0	2.0	1.7	1.9	1.9	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.0
12	1.9	1.9	A	2.1	A	(2.1)^{D}	2.1	2.4	2.3	2.3^{H}	2.4^{H}	1.7	2.1	2.0	2.0	2.0	2.1	A	2.2	2.1	2.1	2.2	2.3	2.2^{F}
13	2.1	A	2.0	2.2^{F}	2.1$^{F}_{S}$	A	A	A	1.9	A	2.1^{H}	1.9	1.8	A	1.8	A	2.0	2.0	A	2.2	2.2	2.2	A	A
14	2.0$^{F}_{S}$	2.1^{F}	2.1^{F}	2.2^{F}	2.2	A	A	G	A	A^{K}	A^{K}	G^{K}	1.6^{K}	G^{K}	1.6^{K}	1.9^{K}	2.0^{K}	A^{K}	A^{K}	A^{K}	2.2^{K}	2.1$^{F}_{K}$	2.2$^{F}_{K}$	2.0^{K}
15	2.1^{K}	2.2$^{F}_{K}$	2.1	2.2^{F}	(2.2)^{S}	2.3	2.0^{H}	2.4^{H}	2.1	2.0	2.1^{H}	2.1	2.0	1.7	1.9	1.7	2.1	2.3	2.1	2.0	2.2	2.1	2.0	2.3
16	2.2	2.0	2.0	2.1	2.2^{F}	2.2	G	2.3	1.9	(1.7)^{D}	2.2	2.2	2.0	2.1^{H}	2.2	2.0	2.0	2.1	2.2	2.3	2.3	A	2.1	A
17	2.2	2.1	A	2.2	2.0	2.2	A	2.5	2.1	2.1	2.0^{H}	2.2	2.1	2.0	2.1	2.2	2.2	2.2	2.2	2.3	(2.3)^{S}	2.4	2.2^{S}	2.0
18	2.0	2.1	2.0	A	2.1^{F}	2.2	2.2	T	A	2.2	2.1	1.9^{H}	1.7	1.8	1.7	2.0	2.0	2.0	2.0	A	A	2.5	(2.5)$^{F}_{S}$	2.3$^{F}_{S}$
19	A	A	2.0	A	2.1	2.4^{F}	2.1	2.1	1.9	A	(1.8)^{S}	2.0	1.6	1.7	2.1^{H}	2.1	2.1	2.1	2.1	2.1	(2.2)^{S}	2.1	2.2$^{F}_{S}$	2.2
20	2.1	2.0^{S}	(2.2)$^{F}_{S}$	(2.2)$^{F}_{S}$	(2.0)$^{F}_{S}$	2.2	2.0	1.8	1.9	(1.1)^{D}	2.1	1.9	1.7	1.7	1.8	1.7	2.0	2.1	2.2	(2.3)$^{F}_{S}$	2.2	2.2	(2.3)$^{F}_{S}$	(2.1)^{D}
21	(2.0)$^{F}_{S}$	(2.1)$^{F}_{S}$	(2.1)$^{D}_{S}$	S	S	2.2	1.7	1.8	2.3	(1.1)^{D}	C	1.9	2.1	2.2	1.9^{H}	1.8	2.0	A	2.1	2.3	2.4	2.5	2.0	2.0
22	2.0	(1.9)$^{D}_{S}$	(2.1)$^{D}_{A}$	2.0	2.1	2.5	2.4	2.0	2.0	1.8	1.6	1.3	1.9^{H}	1.7^{H}	2.2	1.7	2.1	2.1	2.0	(2.1)^{S}	(2.3)$^{F}_{S}$	2.2	2.2	2.1
23	2.1	2.1	(2.0)$^{F}_{S}$	J$^{F}_{S}$	(2.1)$^{D}_{S}$	2.3	2.3	2.3	2.4	2.3	A	A	C	2.0	A	A	2.0	M	M	M	M	2.2	2.2	2.1
24	2.2	A	(2.1)$^{D}_{A}$	(2.1)$^{D}_{S}$	(2.0)$^{D}_{S}$	2.2	1.9^{H}	1.8	(1.9)^{S}	2.2^{H}	2.3	A	1.9	1.9	1.6	2.0	2.1	2.2	2.2	2.2	2.2	2.1	A	(2.1)$^{F}_{S}$
25	(2.2)$^{F}_{S}$	2.2^{S}	2.2	2.3^{F}	2.3	2.5	2.4	2.3	2.1^{S}	2.3^{H}	2.3	A	1.9	2.1	2.0	2.0	1.7	2.2	A	2.2	2.3	2.3	2.3	2.1
26	2.2	A	A	A	A	A	2.1	A	A	A	(2.1)$^{J}_{S}$	2.1	1.7	2.2	A	A	A	A	2.3	A	(2.3)$^{J}_{S}$	(2.3)$^{F}_{S}$	2.2	2.1
27	2.0^{F}	2.1^{F}	(2.0)$^{F}_{S}$	(2.2)$^{F}_{S}$	2.0^{F}	2.2	2.2^{H}	1.7	2.2^{H}	A	A	2.1	2.2	1.7	2.0	1.9^{S}	2.0	A	A	2.2	2.3	2.3	2.2	2.2$^{F}_{S}$
28	(2.2)$^{F}_{S}$	2.2$^{F}_{S}$	(2.2)$^{F}_{S}$	A	A	2.2	2.2	2.2	2.3^{H}	2.1^{S}	2.2	A	2.2	2.1	1.9	2.0	2.0	2.0	2.1	(2.1)^{A}	2.2	2.3$^{F}_{S}$	2.2	2.2$^{F}_{S}$
29	2.2^{F}	2.2$^{F}_{S}$	2.2	2.1^{F}	2.4$^{F}_{S}$	(2.2)^{S}	1.8	1.8	1.9	2.2	2.1	2.0	1.8	1.6	1.7	1.9	1.9	2.0	2.1	2.2	2.2	2.3	2.2	2.2
30	2.1	2.1	2.1	(2.0)$^{A}_{S}$	2.0	2.2	2.2	2.1	2.1	1.9^{H}	2.2	2.2	2.0	2.2	1.8	2.0	2.2	2.1	2.1	2.2^{S}	2.2	2.3	2.2	2.1
31	2.0	2.2	2.2^{F}	2.3$^{H}_{F}$	J$^{F}_{S}$	2.2^{H}	1.1^{H}	2.1	2.4	2.2	2.2	2.1	2.2	2.0	J^{S}	1.8	2.0	2.1	M	2.2	2.3	2.2	2.2	2.2
Median	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.0	2.0	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.1
Count	30	27	27	25	26	28	28	28	28	26	27	27	31	29	28	28	27	24	24	27	29	29	28	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 82

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form accepted June 1946

IONOSPHERIC DATA

(M3000) F2 (Characteristic), ____ (Unit), May (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.9)$^{S}_{F}$	(2.8)$^{S}_{F}$	(3.0)$^{F}_{S}$	(3.3)$^{S}_{F}$	3.2	3.3	3.4	2.8	(2.8)^{S}	3.2	3.4	3.0	3.2	3.0	3.1	3.1	3.1	3.3	3.3	3.3	3.2	3.0	3.0	(3.0)$^{F}_{S}$
2	2.9	3.0	3.2	3.2	3.2$^{F}_{S}$	3.3	3.3	3.4	3.0	2.9	3.2	2.7^{H}	3.3	3.1	3.2	3.1	3.1	3.2	3.3	3.2	3.2	3.1	3.3	3.1
3	3.1	2.9	3.1	3.2	3.2	3.3	3.3	3.5	3.4	3.1	3.3^{H}	3.2	3.4	3.2	3.1	3.2	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.2$^{F}_{S}$
4	3.3$^{F}_{S}$	3.2$^{F}_{S}$	3.2$^{F}_{S}$	3.3^{F}	3.4^{F}	3.3$^{F}_{S}$	3.4^{H}	3.5	3.0	3.1^{H}	3.3	3.3	3.1^{H}	3.0	2.9	3.1	3.0	3.0	2.9	3.1	3.1	(3.4)$^{S}_{D}$	3.3^{F}	3.0
5	2.9	2.9	A	(2.9)$^{F}_{S}$	2.9	3.0	3.3	G	G	2.8	2.9^{S}	3.3	2.8	S	2.9	3.1	A	A	J^{A}	3.3	3.2	A	A	A
6	3.3^{F}	(3.3)^{F}	3.1^{F}	3.2	3.3^{F}	3.4^{S}	3.2^{S}	3.4	2.9	3.4	C	3.1	3.1	2.7	2.8	3.2	3.1	3.2	3.1	3.2	3.2	3.2	3.2	3.1
7	3.0$^{F}_{S}$	3.0	3.0	3.1	3.1$^{F}_{S}$	3.3	3.4	3.2	3.3	(3.3)$^{S}_{D}$	3.1	3.0	3.1	2.9	3.0	3.1	3.3	3.2	3.3	3.2	3.3	3.2	(3.2)^{S}	3.2
8	3.2	3.2^{F}	3.2^{F}	3.2	3.1	3.4	3.4	3.4^{H}	3.1^{H}	3.1^{H}	2.8	3.2	3.0	3.1	2.7	2.9	3.0	3.1	3.0	3.2	3.1	3.1	3.2	3.2
9	3.1$^{F}_{S}$	3.3^{F}	3.1	(3.2)$^{F}_{S}$	(3.1)$^{F}_{S}$	3.2	3.1^{H}	2.9^{H}	3.2	G	G	G^{K}	2.7^{K}	2.7^{K}	2.6^{K}	2.9^{K}	2.9^{K}	3.0^{K}	3.2^{K}	3.2^{K}	3.3^{K}	3.3^{K}	3.0^{K}	3.0^{K}
10	^{K}(3.0)$^{F}_{S}$	(3.0)$^{F}_{S}$	(3.2)$^{F}_{S}$	(3.1)^{S}	3.1^{F}	3.4	3.3	3.5	3.2	3.2	3.3	3.2	3.2	3.1	3.1^{F}	3.2	3.0	3.0	3.1	3.2	(3.2)^{S}	3.1	3.0	3.0
11	2.9	2.9	3.0	3.0	3.1	3.3	3.4	3.3	3.0	3.0	2.8	3.0	3.0	2.9	2.9	2.9	3.2	3.1	3.1	3.1	3.3	3.3	3.3	3.0
12	2.9	2.9	A	3.1	A	(3.1)^{S}	3.1	3.4	3.4	3.3^{H}	3.4^{H}	2.6	3.1	3.0	3.0	3.0	3.1	A	3.2	3.1	3.1	3.2	3.4	3.3^{F}
13	3.1^{F}	A	3.0	3.2^{F}	3.1$^{F}_{S}$	A	A	A	2.9	A	3.1^{H}	2.9	2.7	A	2.8	A	3.0	3.0	A	3.3	3.3	3.2	A	A
14	3.0$^{F}_{S}$	3.1^{F}	3.1^{F}	3.2^{F}	3.2	A	A	G	A	A^{K}	A^{K}	G^{K}	2.2^{K}	G^{K}	2.4^{K}	2.9^{K}	3.0^{K}	A^{K}	A^{K}	A^{K}	3.3^{K}	3.1$^{F}_{K}$	3.2$^{F}_{A}$	3.0^{K}
15	3.1^{K}	3.3$^{F}_{K}$	3.1	3.2^{F}	(3.3)^{S}	3.4	3.0^{H}	3.4^{H}	3.1	3.0	3.1^{H}	3.1	3.0	2.9	2.8	2.9	3.1	3.3	3.1	2.9	3.3	3.1	3.0	3.3
16	3.2	3.0	2.9	3.1	3.2^{F}	3.2	G	3.3	2.9	(2.6)^{S}	3.2	3.2	3.0	3.0^{H}	3.2	3.0	3.0	3.1	3.2	3.3	3.4	A	3.1	A
17	3.2	3.1	A	3.3	3.0	3.2	A	3.5	3.1	3.1	3.0^{H}	3.2	3.1	3.0	3.1	3.2	3.2	3.2	3.2	3.3	(3.3)^{S}	3.4	3.2^{S}	3.0
18	3.0	3.1^{F}	3.0	A	3.1^{F}	3.2	3.2	J	A	3.2	3.0	2.9^{H}	2.6	2.7	2.8	3.0	2.9	3.0	3.0	A	A	3.5	(3.5)$^{F}_{S}$	3.3$^{F}_{S}$
19	A	A	3.0	A	3.1	3.5^{F}	3.1	3.1	2.9	A	(2.8)^{S}	3.0	2.4	2.8	3.0^{H}	3.1	3.1	3.1	3.1	3.1	(3.3)^{S}	3.2	3.2$^{F}_{S}$	3.2
20	3.1	3.0^{S}	(3.2)$^{F}_{S}$	(3.2)$^{F}_{S}$	(3.0)$^{F}_{S}$	3.3	3.0	2.7	2.9	(2.5)$^{D}_{S}$	3.1	2.8	G	2.9	2.7	2.8	3.0	3.1	3.2	(3.3)$^{D}_{S}$	3.2	3.3	(3.2)$^{D}_{S}$	(3.1)$^{D}_{S}$
21	(3.0)$^{D}_{S}$	(3.1)$^{J}_{S}$	(3.1)$^{D}_{S}$	S	S	3.2	2.6	2.7	3.3	(2.3)$^{D}_{S}$	G	2.9	3.1	3.2	2.8^{H}	2.8	3.0	A	3.1	3.3	3.4	3.5	3.0	2.0
22	3.0	(2.9)$^{D}_{S}$	(3.1)$^{D}_{A}$	3.0	3.1	3.5	3.5	3.0	3.0	2.8	2.5	2.8	2.8^{H}	2.9^{H}	3.2	2.9	3.1	3.1	3.0	(3.1)^{S}	(3.4)$^{D}_{S}$	3.2	3.3	3.1
23	3.1	3.1	(3.0)$^{D}_{S}$	J$^{F}_{S}$	(3.1)$^{D}_{S}$	3.3	3.4	3.4	3.5	3.4	A	A	G	3.0	A	A	3.0	M	M	M	M	3.2	3.2	3.1
24	3.2	A	(3.1)$^{D}_{A}$	(3.2)$^{D}_{S}$	(3.0)$^{D}_{S}$	3.2	2.8^{H}	2.7	(2.8)^{S}	3.2^{H}	3.3	A	2.2	2.7	2.4	3.0	3.1	3.2	3.3	3.3	3.3	3.1	A	(3.1)$^{F}_{S}$
25	(3.2)$^{F}_{S}$	3.2^{S}	3.2	3.3^{F}	3.3	3.6	3.5	3.3	3.1^{S}	3.3^{H}	3.3	A	2.9	3.1	3.0	3.0	2.9	3.2	A	3.2	3.3	3.3	3.3	3.1
26	3.2	A	A	A	A	A	3.2	A	A	A	(3.1)$^{J}_{S}$	3.1	2.9	3.2	A	A	A	A	3.3	A	(3.4)$^{J}_{S}$	(3.3)$^{J}_{S}$	3.2	3.1
27	3.0^{F}	3.2^{F}	(3.0)$^{F}_{S}$	(3.2)$^{F}_{S}$	3.0^{F}	3.5	3.5^{H}	2.6	3.2^{H}	A	A	3.1	3.2	2.9	3.0	2.9^{S}	2.9	A	A	3.3	3.4	3.3	3.3	3.2$^{F}_{S}$
28	(3.2)$^{F}_{S}$	3.3$^{F}_{S}$	(3.3)$^{F}_{S}$	A	A	3.3	3.6	3.3	3.3^{H}	3.1^{S}	3.2	A	3.2	3.1	2.8	3.0	3.0	3.0	3.1	(3.1)^{A}	3.2	3.3$^{F}_{S}$	3.3	3.3$^{F}_{S}$
29	3.3^{F}	3.2$^{F}_{S}$	3.2	3.1^{F}	3.4$^{F}_{S}$	(3.2)^{S}	2.7	2.7	2.9	3.2	3.1	2.9	2.7	2.5	2.6	2.9	2.8	3.0	3.1	3.2	3.2	3.3	3.2	3.2
30	3.1	3.1	3.1	(3.0)$^{A}_{S}$	3.0	3.3	3.2	3.2	3.1	2.8^{H}	3.2	3.2	3.0	3.3	2.7	3.0	3.2	3.1	3.1	3.2^{S}	3.2	3.4	3.2	3.1
31	3.0	3.2	3.2^{F}	3.4$^{H}_{F}$	J$^{F}_{S}$	3.2^{H}	2.9^{H}	3.1	3.5	3.4	3.0	3.1	3.0	3.0	J^{S}	2.7	3.0	3.1	M	3.3	3.4	3.2	3.2	3.2
Median	3.1	3.1	3.1	3.2	3.1	3.3	3.2	3.2	3.1	3.1	3.1	3.0	3.0	3.0	2.9	3.0	3.0	3.1	3.1	3.2	3.3	3.2	3.2	3.1
Count	30	27	27	25	26	28	28	28	28	26	27	27	31	29	28	28	29	24	24	27	29	29	28	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 83

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F1 (Characteristic), ____ (Unit), May (Month), 1954

Notional Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1							L	3.6	3.8	3.7 H	3.9	4.2 H	3.8	3.7	3.7	3.7	3.6 H	A	A							
2							L	L	3.7 H	3.8	4.0	3.9 H	3.8	3.9 H	3.9	(3.9) S	3.7	3.5 H	3.6							
3							L	3.6	3.6 H	3.7 H	4.1 H	4.0 H	4.0 H	3.8	3.7 H	3.6	3.7	3.7	L A							
4							L	3.7	3.5	A	3.9	4.0 H	3.9 H	3.9	3.8 H	3.5	3.5 H	3.5	3.5							
5							L	3.5 H	3.7 H	3.8 H	4.2	4.0	4.1	3.8 H	A	3.6	A	A	A							
6							3.6 H	3.7 H	3.8	3.6	C	3.9	4.0 H	3.8	3.8	3.7	3.7	A	3.7							
7							A	3.8	3.7 H	3.8	4.0 H	3.8	3.9	3.8	3.8	3.7 H	3.6 H	3.7	L							
8							L	3.6 H	3.8 H	3.6 H	3.8	3.8 H	3.9	(3.9) S	3.7	3.6 H	3.6	3.6	3.6							
9							3.3 S	3.7 H	3.8 H	3.9 H	3.9 H	3.9 H K	4.0 H K	4.0 H K	3.7 H K	3.6 K	3.6 K	3.6 K	A K							
10							L	3.6 H	3.7 H	3.7	3.8 H	A	(4.2) P	4.0 H	3.7 H	3.7	3.6	A	A							
11							L	3.8	3.6 H	3.8	3.9 H	3.9	3.7	3.7	3.5	A	A	A	A							
12							3.4	3.7	3.7	3.8	3.7 H	3.8 H	A	A	A	A	A	A	A							
13							A	A	3.9 S	A	4.0	4.0 H	3.9 H	A	3.7 H	A	A	A	A							
14							A	3.8	A	A K	A K	4.0 K	3.9 H K	3.9 H K	3.8 K	3.8 K	A K	A K	A K							
15							3.6 H	(3.8) S	3.7 H	(3.6) S	3.7 H	4.0	3.9	3.8	3.7	3.7	3.8	3.5 H	A							
16							3.4	3.5 H	3.7 H	3.9	4.0	3.8 H	(3.9) S	3.8 H	3.9 H	3.6	3.6	3.6	A							
17							A	3.6	4.0	A	3.9	4.1 H	4.0	3.9	3.8	A	3.7 H	3.7 H	L							
18							3.5	T	A	3.9	4.0	3.9	3.9	(4.0) S	3.9 H	3.7 H	3.6	3.5	3.6							
19							3.6	3.6 H	3.7	A	A	3.9	(4.0) S	3.9	3.9 H	3.9	3.7 H	3.5 H	3.6							
20							3.5	3.7	3.8	4.1	4.0	3.6 H	3.9	3.9 H	3.8	3.6 H	3.7	3.6	A							
21							3.5	3.9	3.8	3.9 H	4.0 H	4.1	4.1	4.1	3.9	3.8	3.7	3.7	A							
22							(3.8) L	3.8 H	3.9	3.9 H	4.2	3.9 H	3.9	3.9	3.9	A	3.5	3.6 H	A							
23							3.5	3.7 H	3.9 H	4.0 H	A	A	4.1 H	A	A	A	A	M	M							
24							3.8	4.0	3.8	4.0 H	4.0 H	A	4.1 H	3.8	3.7	3.6 H	A	3.5	3.6 H							
25							A	(3.7) S	3.7 H	4.0 H	4.1	A	3.9	3.9	3.8	3.8	3.6	A	A							
26							3.8	A	A	A	4.1 H	4.1 H	(4.2) S	A	A	A	A	A	A							
27							L	4.0	3.8	A	A	A	3.8 H	3.8	4.0	4.0	A	A	A							
28							L	3.6	3.7 H	3.8	A	A	4.0 H	4.0	3.7 H	3.8	3.8	3.6	L							
29							3.4 H	3.6	3.8 H	3.9	4.0	3.9 H	3.9 S	3.8 H	3.8 H	3.7	3.6	3.5	3.6							
30							3.6	3.7	3.7	3.8 H	3.9 H	4.1 H	3.7 H	3.8 H	3.8	3.7	3.7 H	3.6	A							
31							3.5 H	3.8	A	4.1 H	(4.2) P	4.1 H	4.0 H	3.9 H	3.9 H	3.8	3.7	3.7	M							
Median							3.5	3.7	3.8	3.8	4.0	3.9	3.9	3.9	3.8	3.7	3.6	3.6	3.6							
Count							16	27	27	24	25	25	30	27	27	24	22	19	8							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 84

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form accepted June 1948

IONOSPHERIC DATA

(M1500)E (Characteristic), (Unit) May (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							4.3	4.3	4.3	4.3	4.4	(4.2)P	A	4.4H	A	A	B	4.0	S					
2							4.2H	4.5H	4.3	4.4	4.5	A	4.3H	4.4	A	(4.4)A	(4.3)P	4.5	4.5					
3							4.4H	4.4H	4.4	4.3	4.4H	4.4H	4.5	4.5S	(4.5)S	A	(4.4)S	4.5	S					
4							4.4H	4.5	4.5H	4.4	4.5	4.5	A	4.5	4.5	4.3H	4.4H	4.1H	4.3					
5							4.4	4.3H	4.3H	4.3	(4.4)A	A	A	4.4	4.4	(4.4)B	4.2H	4.3	(4.4)P					
6							A	A	(4.3)A	4.4	C	(4.4)A	A	4.3	4.2	(4.2)P	4.1	4.2	A					
7							A	4.2	4.4	4.5	4.4	(4.5)A	A	A	S	A	4.3	4.3	4.3					
8							4.5H	4.5H	A	A	4.5	4.4	4.4H	4.5	4.4H	4.4	4.4H	4.3	4.2					
9							A	4.4	4.4H	A	4.4	4.4HK	(4.5)PK	4.5K	4.4K	4.3K	4.4K	4.4K	4.4K					
10							4.5	(4.4)P	4.4	4.5	(4.5)A	A	A	A	4.3	4.3	4.3	4.2	(4.2)A					
11							S	4.3	4.5S	4.5	4.4	4.4	4.3H	4.3H	4.3	4.4	4.4	4.4	4.4					
12							4.4	4.3	4.4H	4.3H	4.3H	4.5H	4.5H	4.4	4.4	(4.5)A	4.5	4.3	4.5					
13							4.5	4.3H	4.5	4.5	4.4	A	A	A	4.4H	4.4	4.4	4.4	4.4					
14							(4.5)A	4.5H	4.5	AK	AK	AK	AK	AK	4.4K	4.4K	4.4K	4.3K	4.4K					
15							A	A	4.4	4.6H	4.5	4.5H	4.4	(4.5)A	(4.6)A	(4.5)A	4.3	4.4	4.3H					
16							4.5	4.5	4.6	4.6	4.5	4.4	4.5	4.5H	(4.5)P	A	A	A	A					
17							4.4H	4.5H	4.4	4.4	4.4H	4.5H	A	A	A	4.4	4.5	4.6	(4.5)B					
18							4.4	T	4.5	4.5	4.6	4.5	A	(4.5)A	A	4.4	(4.4)B	4.3	(4.3)B					
19							4.4	4.4	4.5	4.4H	4.5	4.5	4.5	4.5	(4.5)P	4.5	A	4.4	4.4					
20							A	A	4.4H	4.4H	(4.4)P	(4.5)B	4.3H	(4.4)P	(4.4)P	4.4	(4.2)B	4.3H	4.4					
21							(4.4)A	4.4H	4.5	(4.5)P	A	A	(4.5)P	B	4.4	4.5	4.4	4.3	A					
22							S	4.4H	4.5	4.5H	(4.6)A	4.6	(4.5)P	A	(4.6)P	4.4	(4.4)A	(4.4)S	(4.4)H					
23							4.4H	4.4H	(4.4)A	4.5H	4.5H	4.5	(4.4)P	B	4.4H	4.4	M	M	M					
24							(4.5)H	A	A	(4.5)P	4.5	4.5	(4.4)P	(4.4)P	S	4.4H	4.4	4.4	4.6					
25							4.5	4.6	4.5	A	A	A	A	A	A	4.5	4.4	4.5	4.5H					
26							4.4H	4.4	4.5	4.5	4.5	4.6	4.4	4.5	A	4.4H	4.4	4.5	4.6					
27							4.5	4.5	4.4	4.6	4.6	(4.5)A	(4.5)A	A	4.4H	4.4	(4.4)P	4.4	4.5					
28							4.6H	4.5	4.5S	4.5H	A	A	A	4.4	4.4	4.4	4.5H	4.5	4.6					
29							4.5H	4.4	4.4	A	A	A	4.5	4.5	A	A	A	(4.4)P	4.5					
30							4.4	4.4	4.4H	4.5	4.5	A	A	A	A	4.4H	4.5H	4.5H	4.5H					
31							4.5H	4.4	4.4	4.5	4.5	4.5H	4.3H	(4.4)A	4.4	4.5	4.4	4.4H	M					
Median							4.4	4.4	4.4	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.4	4.4	4.4					
Count							24	26	29	26	25	21	18	20	21	26	26	29	24					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 85

Ionospheric Storminess at Washington, D. C.

May 1954

Day	Ionospheric character* 00-12 GCT	12-24 GCT	Principal storms Beginning GCT	End GCT	Geomagnetic character** 00-12 GCT	12-24 GCT
1	2	2			2	1
2	1	1			3	2
3	1	1			2	1
4	1	2			3	3
5	3	2			2	2
6	2	2			3	1
7	1	1			1	2
8	0	0			2	3
9	0	4	1100	----	3	2
10	2	2	----	2400	2	3
11	3	1			4	3
12	3	1			2	2
13	2	3			2	3
14	2	5	0900	----	3	2
15	1	2	----	0100	2	3
16	1	2			2	1
17	3	2			1	1
18	2	3			3	3
19	3	2			3	3
20	1	3			2	3
21	1	2			3	3
22	3	2			2	2
23	1	3			2	1
24	2	3			2	2
25	1	1			2	1
26	2	2			2	2
27	2	2			2	1
28	2	1			1	2
29	1	3			3	2
30	2	1			2	1
31	1	2			1	2

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 86

Radio Propagation Quality Figures

(Including Comparisons with Short-Term and Advance Forecasts)

April 1954

Day	North Pacific 9-hourly quality figures			Short-term forecasts issued at:			Whole day quality index	Advance forecasts (J_p reports) for whole day; issued in advance by:		
	05 to 12	09 to 18	18 to 05	02	09	18		1-4 days	4-7 days	8-25 days
1	7	6	6	6	6	6	7	5	6	
2	5	5	7	6	5	6	6	6	6	
3	6	6	7	6	5	7	7	6	6	
4	6	6	7	6	5	6	6	6	6	
5	6	6	7	6	5	7	7	5	5	
6	5	6	6	7	6	7	6	5	5	
7	5	6	7	6	6	7	6	6	6	
8	6	6	7	6	6	7	6	6	6	
9	6	6	7	6	6	6	6	6	5	
10	5	6	7	6	5	6	6	(4)	(4)	X
11	6	6	5	6	5	7	6	(4)	(4)	X
12	(4)	6	5	5	(4)	6	5	(4)	(4)	X
13	5	(4)	6	(4)	(4)	6	5	5	5	
14	(4)	5	5	5	5	6	5	5	5	
15	5	6	5	6	5	6	5	5	5	
16	5	5	6	5	(4)	6	5	6	6	
17	6	6	6	5	5	6	6	5	6	
18	5	6	7	5	5	6	6	5	6	
19	6	5	6	6	5	6	6	(4)	(4)	X
20	5	5	6	5	5	5	6	(4)	(4)	X
21	5	(4)	6	6	5	6	5	5	5	
22	5	5	7	6	5	7	6	6	5	
23	6	6	6	6	5	7	6	6	6	
24	6	6	6	6	5	6	6	6	6	
25	5	5	7	6	5	7	5	6	6	
26	6	6	6	6	6	7	6	6	6	
27	5	6	6	5	5	6	6	6	5	
28	5	6	5	5	6	6	6	5	6	
29	5	5	6	5	6	7	5	6	6	
30	5	5	6	6	5	6	5	6	6	
Score:										
Quiet Periods			P	16	14	15		14	14	
			S	11	13	14		10	11	
			U	1	0	1		2	1	
			F	0	1	0		4	4	
Disturbed Periods			P	0	1	0		0	0	
			S	2	1	0		0	0	
			U	0	0	0		0	0	
			F	0	0	0		0	0	

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in ( ) for emphasis

Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were ≥ 5, or both ≤ 5
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
- X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

Table 87a

Radio Propagation Quality Figures

(Including Comparisons with Short-Term and Advance Forecasts)

April 1954

Day	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day quality index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Ch}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half day (1)	(2)
1	6	(4)	7	7	6	5	6	7	6	6	6		2	2
2	6	5	7	6	6	5	7	7	6	6	6		2	3
3	5	(4)	7	6	5	5	7	6	6	6	6		3	3
4	(4)	(4)	7	7	6	(4)	7	6	6	6	6		3	3
5	6	5	7	7	5	5	7	7	6	6	6		3	2
6	6	5	7	7	6	6	7	7	6	6	6		2	2
7	6	5	7	7	7	6	7	7	6	6	5		2	1
8	6	5	7	6	6	5	7	7	6	6	5		1	3
9	6	5	7	6	6	5	6	6	6	6	6		2	2
10	6	(4)	7	7	6	(4)	6	6	6	5	5		3	2
11	6	6	7	6	6	5	7	7	7	(4)	(4)	X	3	(4)
12	(3)	(3)	5	5	5	(2)	5	(4)	(4)	(4)	(4)	X	(5)	(4)
13	(2)	(3)	6	6	(3)	(2)	5	5	(4)	(3)	5		2	(4)
14	(4)	(4)	6	6	(4)	(3)	6	6	5	(4)	6		3	2
15	5	(4)	7	6	5	(4)	6	5	5	(4)	6		3	3
16	5	(4)	6	6	5	5	6	6	5	5	5		2	2
17	6	(4)	7	7	5	(4)	6	6	6	6	5		2	2
18	5	5	7	7	6	5	7	7	6	6	5		3	2
19	6	(4)	6	6	5	5	6	6	5	(4)	(4)	X	3	3
20	6	(4)	7	6	5	(4)	6	6	6	(4)	(4)	X	(4)	3
21	5	(4)	7	6	6	(4)	7	7	6	(4)	(4)	X	3	2
22	5	5	7	6	5	(4)	6	6	6	5	5		2	2
23	6	5	7	6	6	5	7	7	6	6	6		3	3
24	5	5	6	6	5	(3)	6	6	6	6	6		3	3
25	5	6	7	7	5	(4)	6	5	6	6	6		3	2
26	5	5	7	6	5	5	6	6	6	6	6		3	3
27	(4)	(3)	6	6	6	5	5	6	(4)	6	6		(4)	2
28	6	5	7	7	5	5	7	6	6	6	6		2	2
29	6	5	7	7	5	5	6	6	7	6	6		2	2
30	6	5	7	6	6	5	6	6	6	6	6		3	3

Score:										
Quiet periods	P	16	10	17	16		13	14		
	S	9	4	13	13		6	10		
	U	0	1	0	1		0	0		
	F	0	1	0	0		3	3		
Disturbed periods	P	1	6	0	0		1	1		
	S	1	7	0	0		1	1		
	U	1	1	0	0		0	0		
	F	2	0	0	0		1	1		

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in ( ) for emphasis

Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were ≥ 5, or both ≤ 5
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
- X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

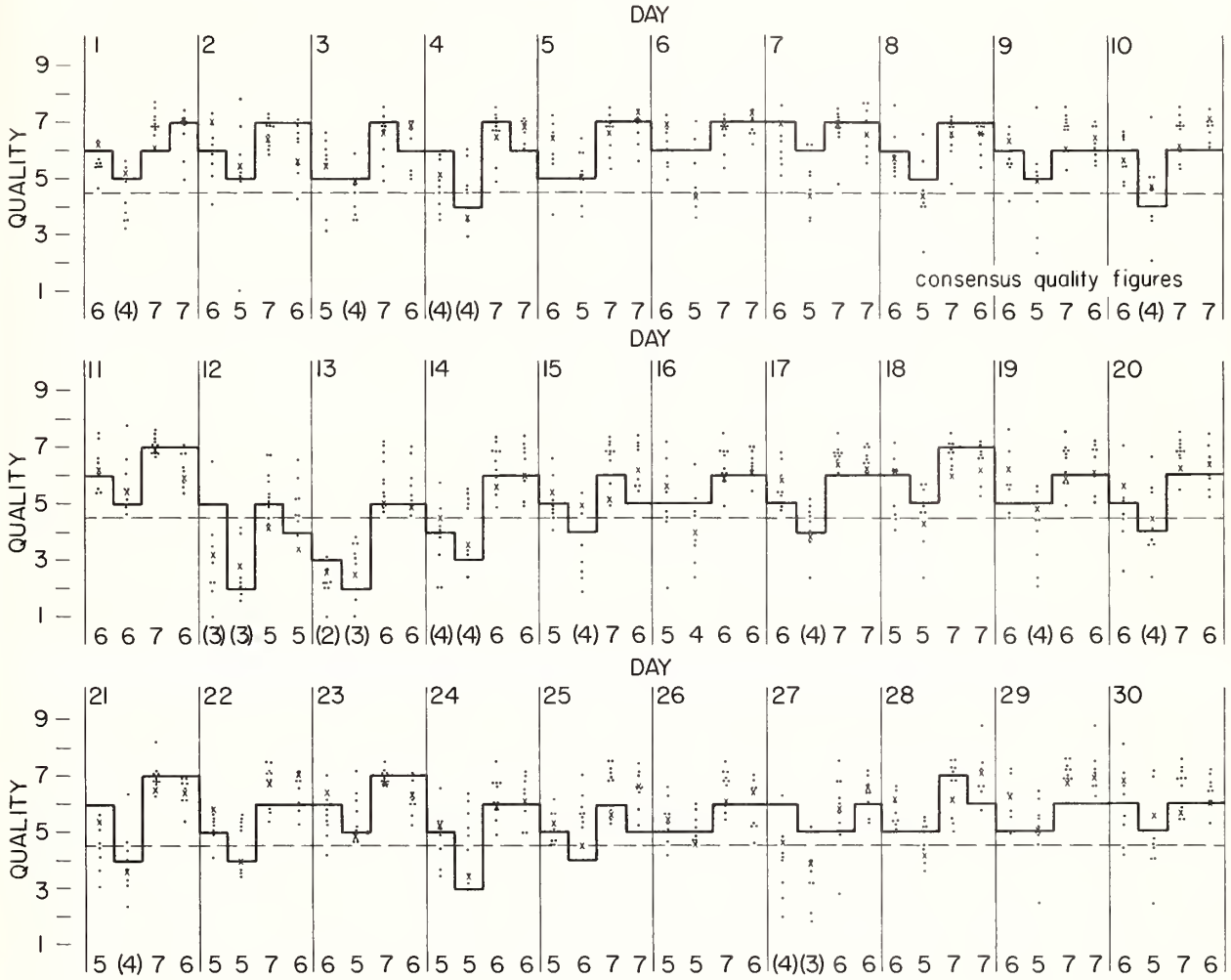
Table 87b

Short-Term Forecasts---April 1954

— forecast

• individual reports of quality (adjusted to CRPL scale)

x CRPL observation (not in consensus)



Outcome of Advance Forecasts (1 to 4 days ahead) --- April 1954

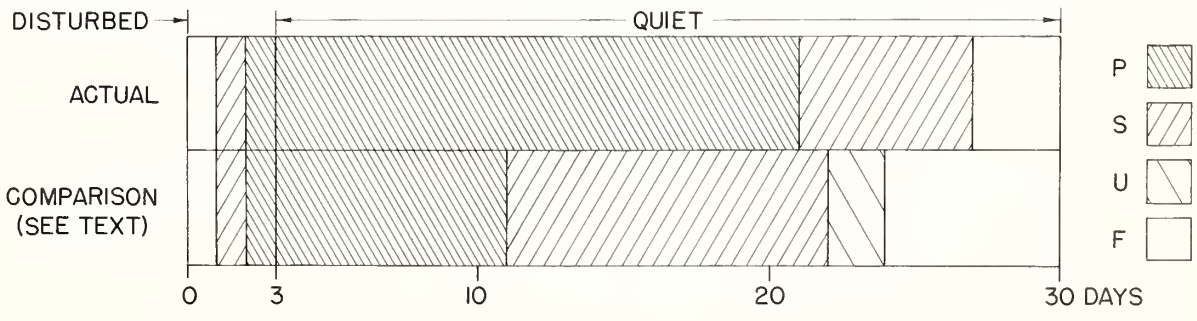


Table 88a

Coronal observations at Climax, Colorado (5303A), east limb

Date (UT)	Degrees north of the solar equator																				Degrees south of the solar equator																			
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90				
1954																																										
May 2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4		5	4	3	1	1	1	1	1	1	1	1	-	-	-	-	-	X	X				
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3		5	4	2	1	-	-	1	1	1	-	-	-	-	-	-	-	-	-				
5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1		2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
6.6	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
7.6	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
8.7a	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X				
9.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
11.7a	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
14.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1		1	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-				
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	3	3	3	3	-	-	-	-	-	-	-	-				
20.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
21.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
27.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
28.6	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	1	2		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
31.7	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-		-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-				

Table 89a

Coronal observations at Climax, Colorado (6374A), east limb

Date (UT)	Degrees north of the solar equator																				Degrees south of the solar equator																			
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90				
1954																																										
May 2.9	2	2	2	2	1	1	1	1	1	1	2	3	3	4	5	5	4	3	3		2	2	2	2	3	5	4	3	3	2	2	2	2	2	2	2	X	X				
3.7	3	3	2	2	1	1	1	1	1	1	1	2	2	3	4	5	5	5	4		5	5	3	6	3	5	6	5	3	2	1	1	1	1	1	2	3	2				
5.6	2	3	2	2	1	1	1	2	2	2	1	1	3	3	2	6	5	5	6		5	5	5	6	6	4	3	2	2	2	1	1	1	1	1	1	2	2				
6.6	2	2	1	1	1	1	1	1	1	1	1	1	2	3	4	5	4	4	4		5	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1				
7.6	1	2	1	1	1	1	1	1	1	1	1	3	3	3	3	4	5	4	4		4	3	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	2				
8.7a	X	2	1	1	1	-	-	-	-	-	-	-	1	1	1	3	3	3	2		1	1	1	1	1	2	1	1	1	1	1	1	-	-	-	-	-	X	X				
9.7a	3	2	1	1	1	1	1	1	1	1	1	3	3	2	3	4	4	3	3		3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	2	2				
11.7a	X	X	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	5	6		5	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2				
12.7	2	2	1	1	1	1	1	1	-	-	1	2	2	2	2	2	3	4	3		4	4	3	3	4	4	3	2	1	1	1	1	1	1	1	2	2	2				
14.6a	2	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	3		3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2				
17.6	2	2	2	1	1	1	1	1	2	2	2	3	3	3	4	4	5	6	6		6	6	6	5	5	3	2	1	1	1	1	1	1	1	1	2	2	2				
18.7	2	1	1	1	1	1	1	1	1	1	2	3	5	5	4	4	5	6	6		6	6	5	5	5	5	3	1	1	1	1	1	1	1	1	1	2	2				
20.7a	2	2	2	2	-	-	-	-	-	1	1	1	2	2	3	3	4	4	5		5	2	3	3	3	4	3	2	1	1	1	1	1	2	2	2	2	2				
21.6a	2	2	1	1	1	1	1	1	1	1	1	2	3	3	3	3	3	6	5		3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	2	2				
24.6	2	2	2	1	1	1	1	1	1	1	1	1	1	2	3	4	3	4	3		5	4	4	4	5	4	3	1	1	1	1	1	1	1	1	2	2	2				
25.6	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3		3	4	4	4	3	2	2	2	1	1	1	1	1	1	1	1	1	2				
26.6a	2	2	-	-	-	-	-	-	-	-	-	1	1	2	2	2	2	3	3		3	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
27.7a	2	2	2	1	1	-	-	-	-	-	-	-	1	1	1	3	3	3	2		1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				
28.6	2	2	2	2	2	1	1	1	1	1	1	2	4	3	3	3	2	2	2		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
30.7a	3	3	2	2	2	2	1	1	1	1	1	1	1	3	4	5	5	4	4		3	3	4	4	3	2	2	2	1	1	1	1	1	1	1	2	2	2				
31.7	2	2	2	2	1	1	1	-	-	2	2	3	3	3	3	4	5	6	6		6	6	6	5	4	4	3	3	1	1	1	1	1	2	3	3	2	2				

Table 90a

Coronal observations at Climax, Colorado (6702A), east limb

The 6702A coronal line was not visible on any of the observation dates in May at the position angles indicated for the 6374A line.

Table 88b

Coronal observations at Climax, Colorado (5303A), west limb

Date GCT	Degrees south of the solar equator																				Degrees north of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90			
1954																																								
May 2.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-		
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
6.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
8.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
9.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X			
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
14.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
20.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
21.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-			
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
27.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
28.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
31.7a	-	-	-	-	-	-	-	-	-	1	2	3	1	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-			

Table 89b

Coronal observations at Climax, Colorado (6374A), west limb

Date GCT	Degrees south of the solar equator																				Degrees north of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90			
1954																																								
May 2.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2		
3.7	2	2	2	2	2	2	1	1	1	1	1	3	4	4	4	5	4	4	5		5	5	3	4	4	6	4	3	2	2	2	2	3	3	3	3	3	3			
5.6	2	2	1	1	1	1	1	1	1	1	1	1	5	5	3	4	4	4	5		4	4	5	5	4	4	3	3	2	1	1	1	2	2	2	2	2	2			
6.6	1	2	2	2	1	1	1	1	1	1	2	3	4	4	3	3	3	4	3		3	4	3	3	2	2	2	2	1	1	1	1	1	1	1	1	2	2			
7.6	2	2	1	1	1	1	1	1	1	1	1	3	2	2	2	3	3	3	3		3	4	3	3	2	2	2	3	2	1	1	1	1	1	1	1	1	1			
8.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
9.7a	2	2	2	2	1	1	1	1	1	1	2	3	3	4	4	4	4	4	4		3	3	3	3	3	3	2	2	1	1	1	1	1	1	1	1	2	3			
11.7a	2	2	2	2	1	1	1	1	2	3	3	4	4	5	5	5	5	5	5		5	5	5	5	5	3	2	2	2	2	2	2	2	2	2	2	2	X			
12.7	2	1	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	4		4	4	3	3	3	2	2	1	1	1	1	1	1	1	1	2	2	2			
14.6a	2	1	1	1	1	-	-	-	-	-	-	-	-	3	3	3	3	3	3		3	4	5	3	3	3	3	3	3	1	1	1	1	1	2	2	2	2			
17.6	2	2	2	2	2	2	1	1	1	1	1	1	1	4	4	4	3	5	4		5	4	2	3	3	2	2	1	1	1	1	1	1	2	2	2	2				
18.7	2	2	2	2	2	1	1	1	1	1	1	3	4	5	5	5	5	6	5		5	5	3	3	2	2	2	2	1	1	1	2	2	2	2	2	2	2			
20.7a	2	2	3	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	2		2	2	2	2	2	2	2	1	1	1	1	1	1	2	2	2	2				
21.6a	2	2	2	2	1	1	1	1	1	2	2	2	3	4	4	4	3	3	3		3	3	4	4	4	2	2	2	2	1	1	1	1	1	2	2	2	2			
24.6	2	2	2	2	2	1	1	1	1	1	1	1	3	4	3	2	2	2	2		3	3	3	3	3	3	4	5	1	1	1	1	1	1	1	2	2				
25.6	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	3	3	4		3	3	3	3	3	4	3	2	1	1	1	1	1	1	1	1	2				
26.6a	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	2	2	2	2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
27.7a	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3		3	3	3	3	3	3	3	3	2	2	1	1	1	1	1	2	2				
28.6	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	2		3	2	3	3	3	3	2	2	2	1	1	1	1	1	1	1	2	2			
30.7a	2	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2		2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2	2	3			
31.7a	2	2	1	1	1	1	1	1	1	1	1	1	2	5	5	6	6	6	6		6	6	5	6	4	5	5	4	3	2	2	2	2	3	3	3	3	3			

Table 90b

Coronal observations at Climax, Colorado (6702A), west limb

The 6702A coronal line was not visible on any of the observation dates in May at the position angles indicated for the 6374A line.

Table 91a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date GCT	Degrees north of the solar equator																			Degrees south of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
May 2.6	-	-	-	-	-	-	-	2	3	4	5	4	3	3	3	3	4	4	8	9	11	10	8	4	3	2	2	2	3	3	2	-	-	-	-	-	-
3.7a	-	-	-	-	-	-	-	-	-	-	3	2	3	3	3	3	3	2	3	5	5	4	3	3	3	2	3	3	3	3	2	-	-	-	-	-	-
4.7a	-	-	-	-	-	-	-	3	3	3	3	4	3	3	3	3	4	4	4	4	4	5	4	4	3	3	4	4	3	3	2	-	-	-	-	-	-
5.7a	-	-	-	-	-	-	-	-	2	2	3	4	3	2	3	2	2	3	2	3	4	3	4	5	4	4	2	2	3	3	2	-	-	-	-	-	-
6.7a	-	-	-	-	-	-	-	-	2	2	3	3	3	2	2	3	3	2	2	3	3	4	3	3	2	2	3	3	2	2	2	-	-	-	-	-	-
8.7a	-	-	-	-	-	-	-	-	2	3	3	4	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7a	-	-	-	-	-	-	-	-	-	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.8a	-	-	-	-	-	-	-	-	-	-	2	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-
12.8a	-	-	-	-	-	-	-	2	2	2	3	3	3	2	3	2	2	2	2	3	3	2	2	2	2	2	3	2	-	-	-	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	2	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	2	2	3	2	2	2	2	2	2	2	3	2	2	-	-	2	2	2	2	3	3	2	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	2	3	2	2	3	2	2	3	3	2	3	2	2	3	2	2	2	-	2	3	3	2	3	-	-	-	-	-	-
26.7a	-	-	-	-	-	-	-	-	3	3	2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	2	3	3	3	3	4	4	3	2	-	-	-	2	4	3	4	5	4	3	2	2	2	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	3	3	3	4	3	2	2	2	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	2	2	2	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 92a

Coronal observations at Sacramento Peak, New Mexico (6374A), east limb

Date GCT	Degrees north of the solar equator																			Degrees south of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
May 2.6	3	4	3	3	4	2	-	-	2	2	3	4	5	6	5	8	10	13	11	9	8	7	5	4	5	8	10	9	5	3	-	2	3	3	3	3	4
3.7a	2	3	3	2	2	2	2	3	3	3	3	3	4	5	5	5	6	6	7	5	4	4	4	5	4	4	6	5	3	3	-	-	2	2	3	3	4
4.7a	3	2	3	2	3	-	2	2	3	3	2	2	2	3	3	5	5	6	7	8	9	7	7	5	5	6	5	4	3	2	-	3	2	-	2	2	3
5.7a	2	3	3	2	2	2	2	3	3	3	2	3	2	4	5	4	6	8	7	6	5	5	4	4	4	3	4	4	3	3	2	2	2	2	2	3	3
6.7a	2	3	2	2	-	-	-	2	3	-	2	3	4	4	5	6	7	8	7	7	8	6	5	6	5	4	4	5	2	2	-	-	2	-	-	3	3
8.7a	2	2	2	-	-	-	-	-	-	-	-	-	-	3	3	3	4	4	4	5	4	4	4	4	3	2	3	5	3	3	2	2	2	-	-	-	-
10.7a	2	-	-	-	-	-	-	-	-	-	-	-	2	3	3	4	5	5	6	7	6	5	5	4	5	5	5	3	4	2	2	2	2	2	2	2	2
11.8a	-	2	2	-	2	3	2	-	-	2	3	6	5	6	4	5	7	7	8	9	8	7	6	5	6	5	5	6	-	-	-	-	-	-	-	-	-
12.8a	2	3	3	3	3	-	-	-	2	3	2	3	3	4	5	4	5	7	8	9	8	6	5	5	6	5	4	3	2	2	2	3	3	2	2	2	3
19.7	2	2	3	2	-	2	2	-	-	2	3	4	4	5	4	5	5	8	7	8	6	5	4	4	4	5	4	3	2	2	-	-	-	2	3	3	3
23.6	2	2	-	2	-	-	2	2	2	2	2	3	2	3	3	4	5	4	4	4	4	3	4	5	3	3	4	4	3	2	2	3	2	3	3		
25.7	2	3	2	2	2	3	2	2	2	3	3	2	-	3	5	6	5	6	7	8	10	9	8	5	5	5	6	4	3	2	-	2	2	2	3	2	3
26.7a	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	4	5	6	8	7	6	5	4	4	3	3	4	5	3	-	-	-	2	3	4	4	3
28.7	4	2	2	2	3	2	2	-	-	2	3	3	5	7	8	7	8	8	6	5	5	6	4	4	4	3	4	5	2	3	2	-	2	3	3	3	3
30.7a	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	4	5	4	5	4	3	3	4	5	4	3	3	2	2	2	-	-	-	-	-	-	-
31.7	2	3	2	2	3	2	2	-	-	-	3	4	6	5	6	8	9	11	12	11	10	8	9	9	8	7	8	5	2	2	-	-	2	-	2	3	4

Table 93a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

The [illegible] coronal line [illegible] was [illegible] observation dates in [illegible].

Table 91b

Coronal observations at Sacramento Peak, New Mexico (5303A), west limb

Date GCT	Degrees south of the solar equator																				Degrees north of the solar equator																		
	0	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90			
1954																																									
May 2.6	-	-	-	-	-	-	-	2	3	3	4	3	3	3	2	2	-	-	-		-	-	-	-	2	2	2	3	4	3	2	-	-	-	-	-	-	-			
3.7	-	-	-	-	-	-	-	-	2	3	3	2	2	2	2	-	-	-	-		-	-	-	-	-	-	-	-	-	3	3	3	3	3	-	-	-			
4.7a	-	-	-	-	-	-	2	2	2	3	3	3	5	4	4	3	2	3	3		3	4	3	3	3	3	2	3	2	-	-	-	-	-	-	-	-	-			
5.7a	-	-	-	-	-	-	-	2	2	2	3	3	2	3	3	3	3	2	3		3	3	2	3	3	2	2	2	3	-	-	-	-	-	-	-	-	-			
6.7a	-	-	-	-	-	-	-	-	-	2	3	3	2	3	2	3	3	2	2		2	3	3	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-			
8.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	2	2	2	3	4	4	3	-	-	-	-	-	-	-	-	-			
10.7a	-	-	-	-	-	-	-	-	-	2	2	3	2	2	-	-	-	-	-		-	2	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-			
11.8a	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3	2	2		3	3	4	3	3	2	3	3	2	2	-	-	-	-	-	-	-	-			
12.8	-	-	-	-	-	-	-	-	-	-	2	3	3	2	3	2	2	2	-		-	2	2	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-			
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	2	2	3	2	3	2	-	-	-	-	-	-	-			
23.6	-	-	-	-	-	-	-	-	-	-	2	2	-	2	2	3	3	3	2		3	2	2	2	2	-	-	-	2	2	2	3	2	-	-	-	-	-			
25.7	-	-	-	-	-	-	-	-	-	-	2	2	-	2	2	3	3	3	2		3	2	3	2	-	-	-	2	3	2	2	-	-	-	-	-	-	-			
26.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
28.7	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	2		2	-	-	-	2	2	2	-	2	3	3	2	2	-	-	-	-	-			
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3		3	2	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-			
31.7	-	-	-	-	-	-	-	-	2	3	3	2	3	4	3	2	2	-	-		-	-	-	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-			

Table 92b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date GCT	Degrees south of the solar equator																				Degrees north of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90			
1954																																								
May 2.6	4	3	3	2	3	2	-	2	-	3	2	3	6	7	8	7	7	7	10		7	8	10	9	8	12	11	8	3	2	2	-	-	2	3	4	3	3			
3.7	4	4	3	3	3	2	2	-	2	3	3	3	4	6	6	5	8	10	11		9	7	6	5	6	8	9	8	6	2	3	-	-	2	2	2	2	2			
4.7a	3	3	2	2	2	3	2	2	3	4	3	3	4	8	7	5	6	8	7		5	6	4	4	3	4	4	3	3	2	2	-	2	2	2	3	2	3			
5.7a	3	3	2	2	2	2	2	2	3	3	3	4	5	8	7	7	6	7	11		10	8	7	7	6	5	6	5	4	3	-	-	2	2	2	2	3	2			
6.7a	3	3	3	2	2	2	-	2	2	2	3	4	4	5	4	5	4	4	5		4	5	6	6	5	5	4	5	5	3	3	2	2	2	-	-	2	2			
8.7a	-	-	-	-	-	-	-	-	-	-	2	4	4	5	6	5	4	5	8		7	6	6	4	3	4	4	4	4	3	2	-	-	-	-	-	-	2			
10.7a	2	2	-	-	-	-	-	-	-	2	-	3	3	5	4	5	6	7	6		5	4	4	5	6	4	3	2	2	3	2	2	3	2	2	2	3	2			
11.8a	-	-	-	-	-	-	-	-	-	-	2	3	4	4	3	4	4	3	4		4	5	5	5	4	4	4	3	2	-	-	-	-	-	-	-	-	-			
12.8	3	2	3	2	2	2	3	2	2	3	2	2	3	4	5	5	4	6	8		7	7	7	6	5	5	4	-	2	2	-	-	-	2	3	2	3	2			
19.7	3	2	2	2	2	2	2	2	2	3	2	3	3	3	5	4	5	6	7		6	5	4	4	3	2	3	3	2	-	-	-	-	2	2	2	2	2			
23.6	3	2	2	2	2	2	2	2	2	2	2	2	3	3	4	4	3	4	5		6	5	6	8	7	8	7	7	3	2	-	2	2	-	3	3	3	2			
25.7	3	2	2	2	3	2	2	-	2	3	2	3	4	3	5	5	8	7	8		5	4	5	5	6	4	2	3	2	-	2	3	3	3	2	2	2	2			
26.7a	3	2	2	2	2	2	2	2	2	2	3	3	3	3	3	4	4	6	8		4	3	2	2	2	2	3	3	-	-	-	-	-	-	-	-	-	-			
28.7	3	2	2	2	-	-	-	-	-	-	2	3	3	4	5	6	7	11	10		9	8	5	4	4	4	5	4	4	3	4	-	-	-	2	3	2	4			
30.7a	-	-	-	-	-	-	-	-	-	-	2	2	3	3	5	4	5	8	7		6	5	4	4	7	8	7	4	5	2	2	-	-	-	-	-	-	-			
31.7	4	3	2	3	3	2	-	-	2	2	-	2	3	8	7	8	8	14	13		11	9	8	5	10	8	7	6	5	4	3	2	2	3	2	3	2	2			

Table 93b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

The 6702A coronal line was not visible on any of the observation dates in May.

Table 94

Zürich Provisional Relative Sunspot Numbers

May 1954

Date	R_Z *	Date	R_Z *
1	0	17	0
2	0	18	0
3	0	19	0
4	0	20	0
5	8	21	0
6	0	22	0
7	0	23	0
8	0	24	0
9	0	25	0
10	0	26	0
11	0	27	0
12	0	28	0
13	0	29	0
14	9	30	0
15	6	31	0
16	0	Mean:	0.7

*Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 95

American Relative Sunspot Numbers

April 1954

Date	R_A'	Date	R_A'
1	0	17	1
2	0	18	2
3	0	19	0
4	0	20	0
5	0	21	0
6	0	22	0
7	2	23	0
8	5	24	0
9	2	25	0
10	0	26	0
11	0	27	0
12	0	28	0
13	0	29	0
14	1	30	0
15	3		
16	3	Mean:	4.0

Table 96

Solar Flares, April and May 1954

No solar flares were reported for the months of April and May.

Table 97

Indices of Geomagnetic Activity for April 1954

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1954	C	Values Kp three-hour interval 1 2 3 4	5 6 7 8	Sum	Final Selected Days
1	0.4	2- 2- 2o 1-	1- 3- 1+ 3o	14-	Five
2	0.9	1+ 1o 1o 3o	3+ 3+ 3+ 4o	20+	Quiet
3	1.0	3- 3+ 3- 2+	3- 2- 3o 4o	22+	
4	0.8	3+ 5- 3+ 3-	1+ 1+ 3+ 4-	24-	1
5	0.3	2- 3o 4o 3-	1- 1- 1- 2o	15+	7
					25
6	0.4	2+ 2o 2o 2+	2o 2o 2- 2+	17-	28
7	0.5	2+ 2- 2+ 1+	2- 1+ 3o 1+	15o	29
8	0.8	1o 1o 1+ 2o	2- 1+ 4- 4o	16o	
9	0.6	4- 2- 2- 2-	3- 3o 2- 2-	18-	
10	0.6	3- 3- 3- 2+	2o 3o 3- 2-	20-	
11	1.4	3+ 2- 1o 2-	1+ 4- 6- 7+	26-	Five
12	1.6	7- 7+ 5o 4-	5- 3+ 4- 4+	39-	Disturbed
13	1.0	3+ 2o 1+ 3-	4o 3+ 3o 4-	23+	
14	0.6	3- 4- 2o 3o	3- 2o 1+ 1o	18+	11
15	1.1	4- 3+ 3o 3-	3+ 3+ 4o 3+	27-	12
					15
16	0.4	2+ 2- 3o 2o	2- 1+ 3- 1+	16o	20
17	0.4	2- 2o 2- 1o	2- 3- 2+ 3-	16-	23
18	0.7	3+ 3o 3- 3+	3- 2o 3o 3-	23-	
19	0.7	2+ 3- 2+ 3o	2o 3- 3- 2o	20-	
20	1.1	4- 3+ 3o 2+	3+ 4o 4+ 3-	27-	
21	0.8	3o 3+ 3+ 3+	4- 3o 2- 2-	23o	Ten
22	0.4	3o 3o 2+ 2-	3- 1- 0+ 1o	15-	Quiet
23	1.0	3o 3o 3o 3+	3o 3- 4o 4-	26-	
24	0.8	3+ 3o 2o 3-	1- 2+ 3o 4-	21-	1
25	0.3	3o 2+ 2+ 1-	1o 2- 2+ 2-	15o	5
					6
26	0.8	3+ 3+ 2+ 1o	3- 3- 3o 4-	22o	7
27	0.9	5o 3o 4- 2+	1o 1+ 3o 2-	21o	16
28	0.2	3- 2o 1+ 1o	1+ 1o 1+ 2+	13o	17
29	0.3	3o 2o 1+ 1o	2o 1+ 2o 1+	14o	22
30	0.5	1+ 3- 3+ 3+	3- 1+ 1+ 2o	18o	25
					28
Mean:	0.71				29

Table 98

Sudden Ionosphere Disturbances Observed at Washington, D. C.

April and May 1954

No sudden ionosphere disturbances were observed during the months of April and May.

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder, Colorado.

GRAPHS OF IONOSPHERIC DATA

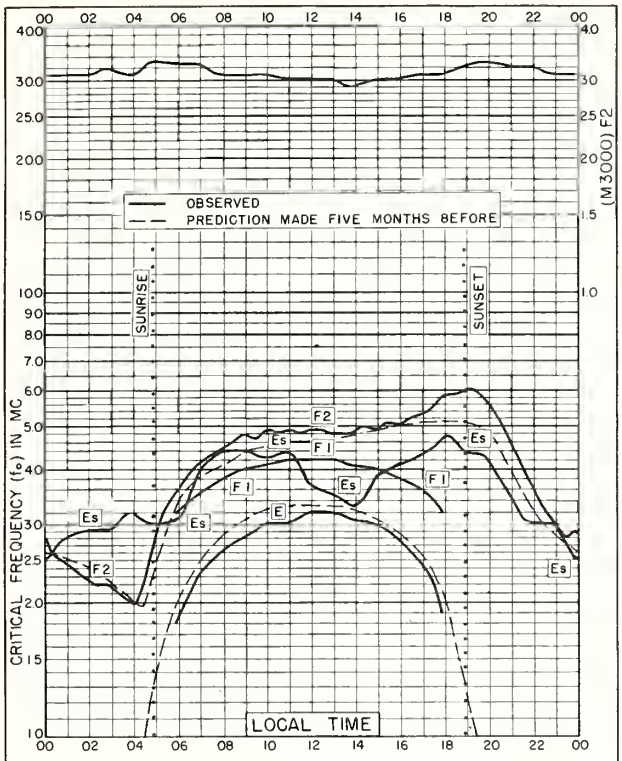


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W MAY 1954

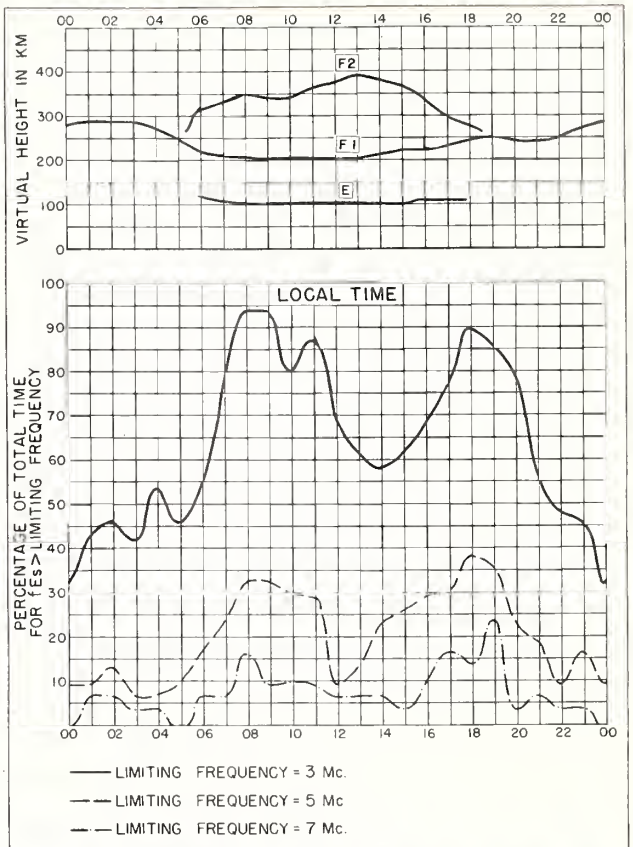


Fig. 2. WASHINGTON, D. C. MAY 1954

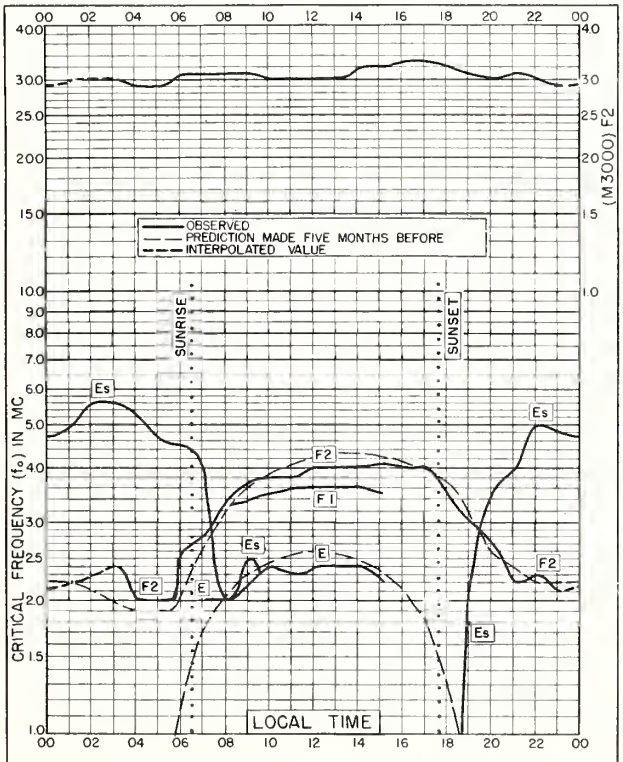


Fig. 3. FAIRBANKS, ALASKA
64.9°N, 147.8°W MARCH 1954

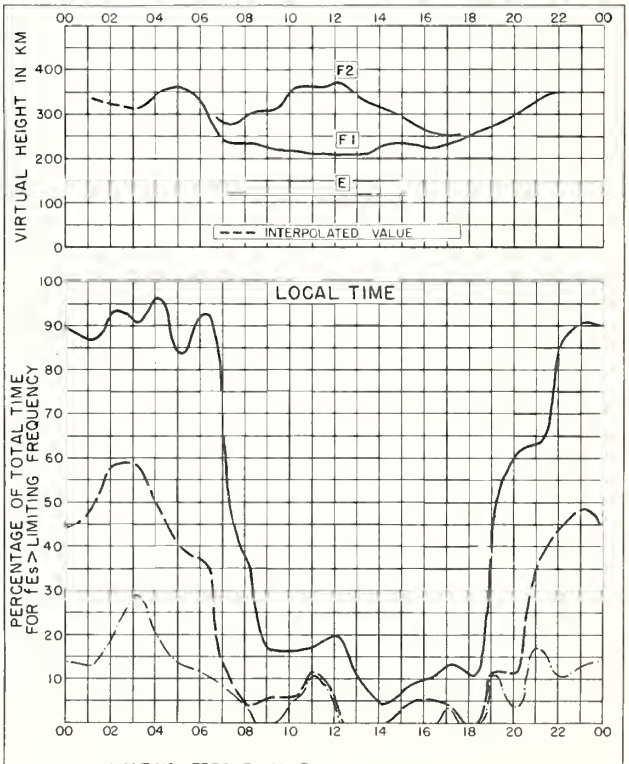


Fig. 4. FAIRBANKS, ALASKA MARCH 1954

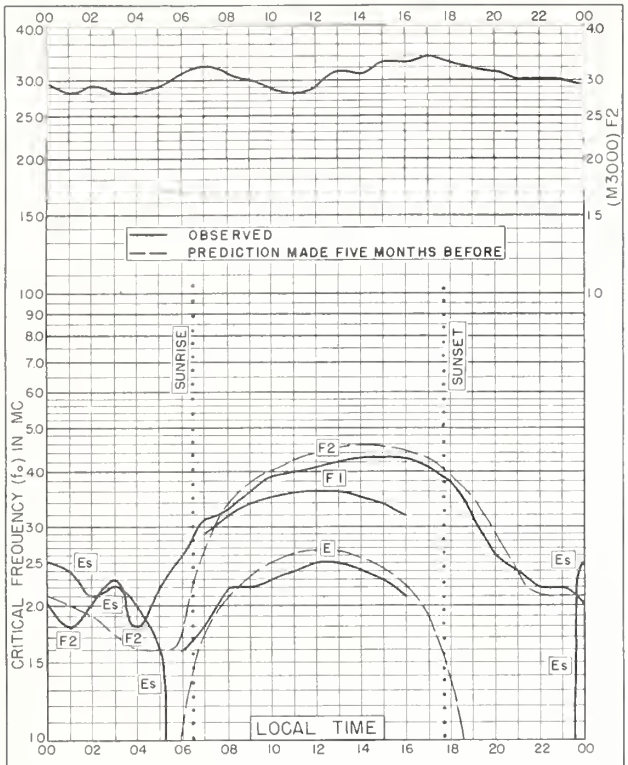


Fig. 5. ANCHORAGE, ALASKA
61.2°N, 149.9°W MARCH 1954

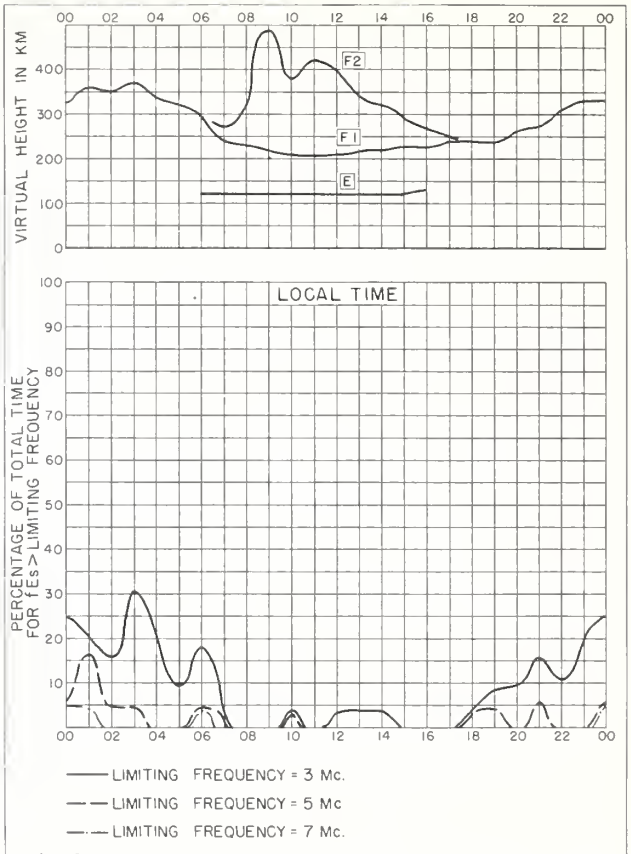


Fig. 6. ANCHORAGE, ALASKA MARCH 1954

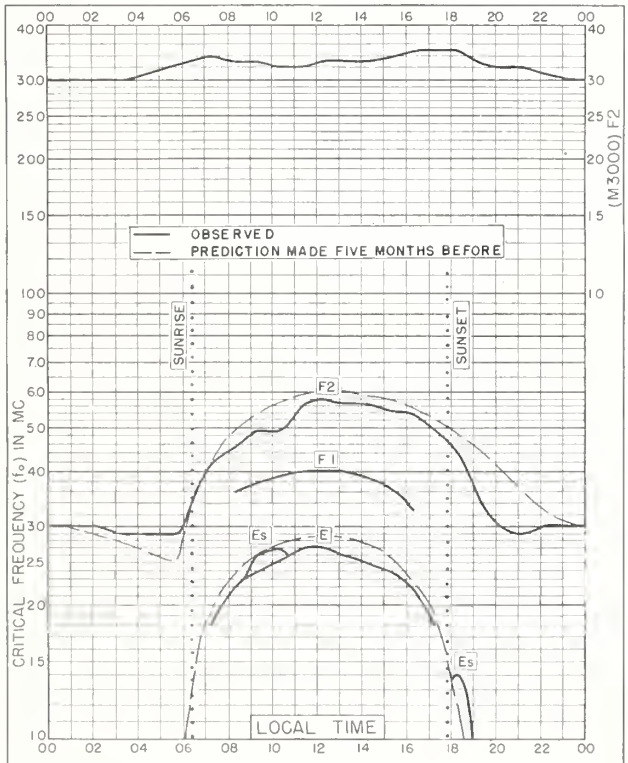


Fig. 7. ADAK, ALASKA
51.9°N, 176.6°W MARCH 1954

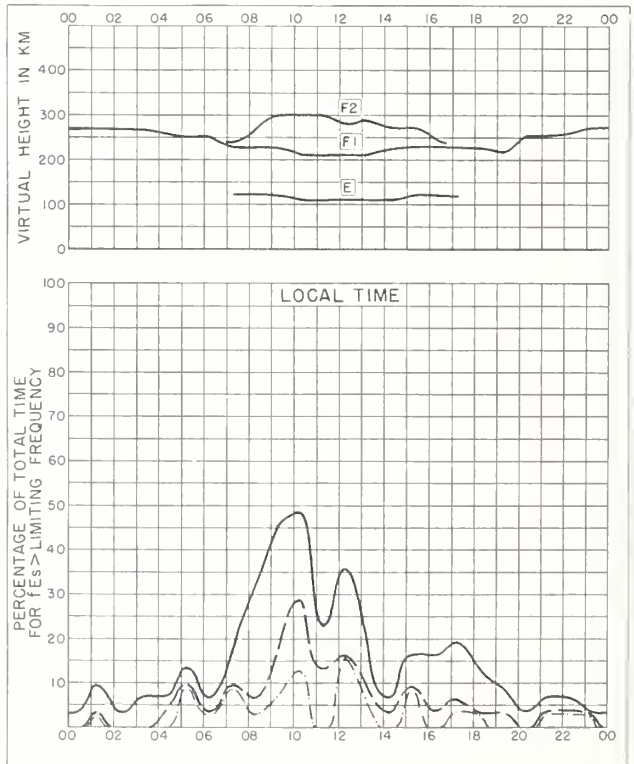


Fig. 8. ADAK, ALASKA MARCH 1954

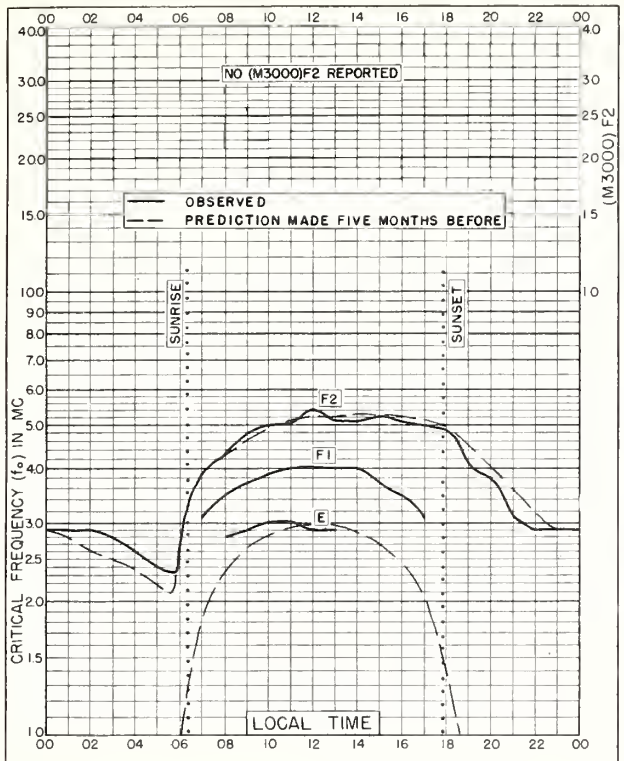


Fig. 9. GRAZ, AUSTRIA
47.1°N, 15.5°E MARCH 1954

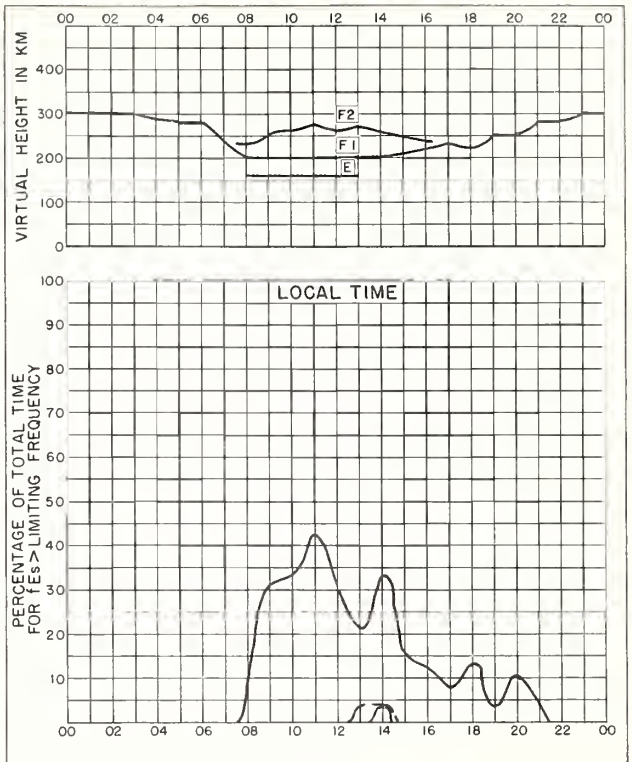


Fig. 10. GRAZ, AUSTRIA MARCH 1954

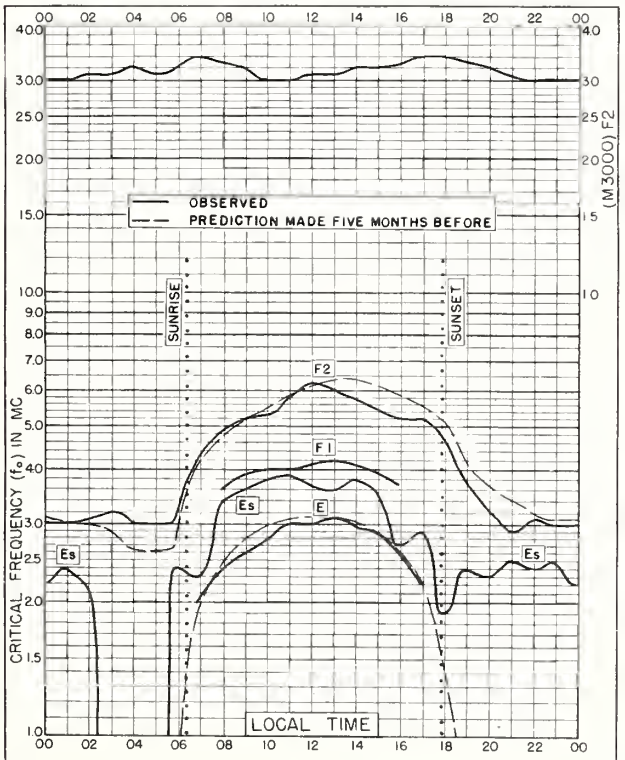


Fig. 11. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W MARCH 1954

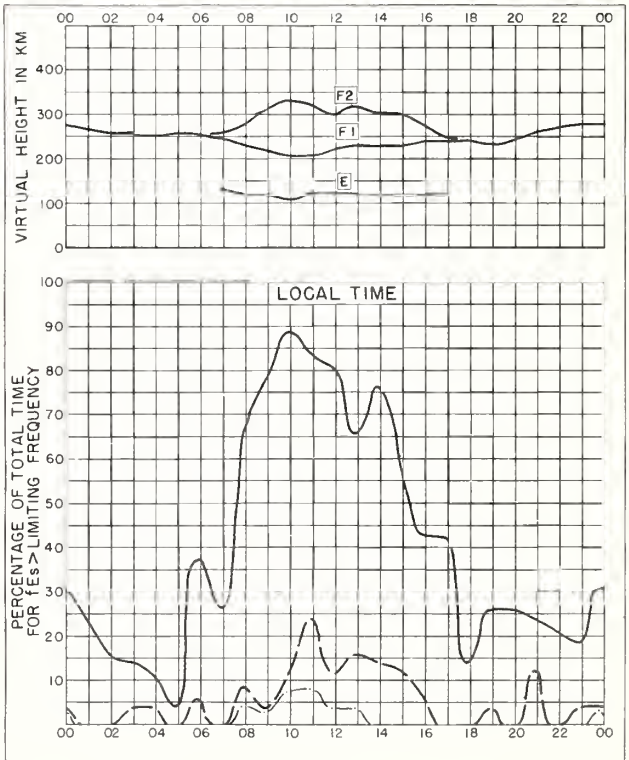


Fig. 12. SAN FRANCISCO, CALIFORNIA MARCH 1954

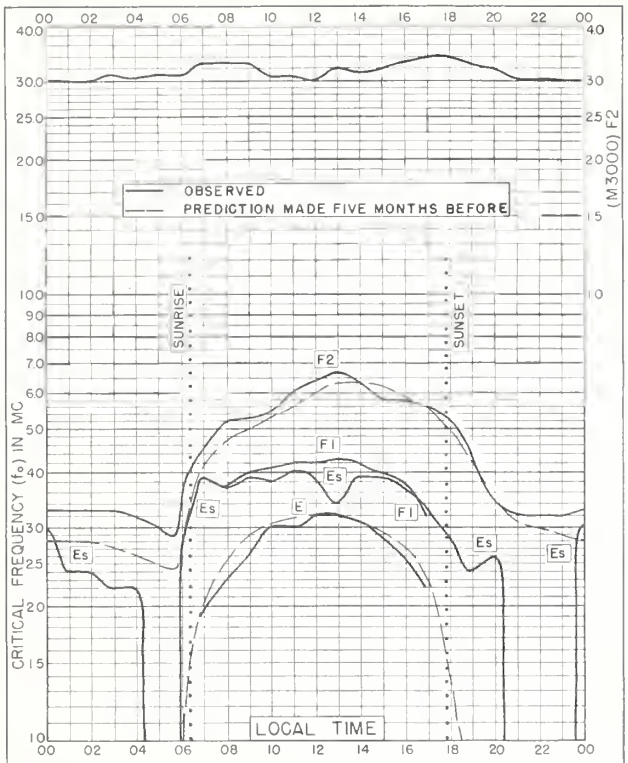


Fig. 13. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W MARCH 1954

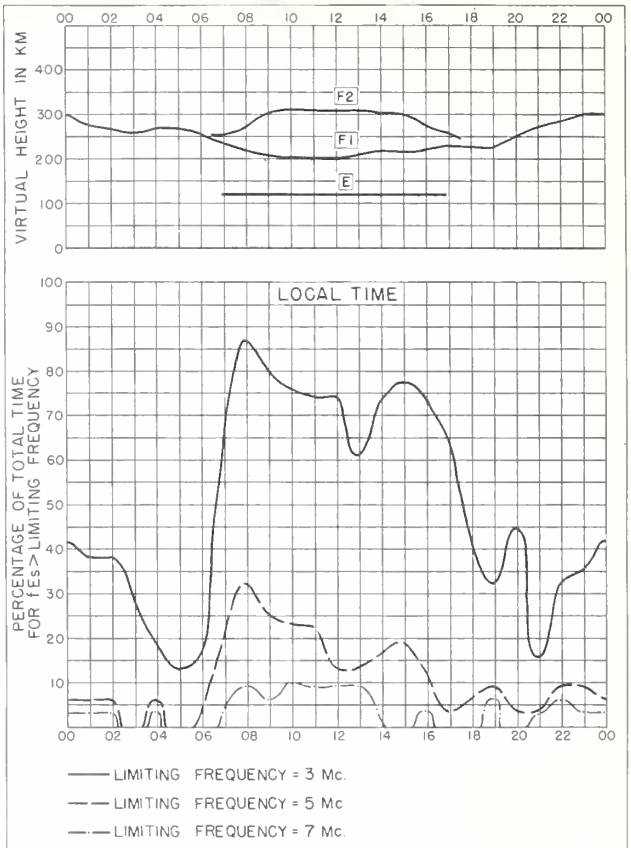


Fig. 14. WHITE SANDS, NEW MEXICO MARCH 1954

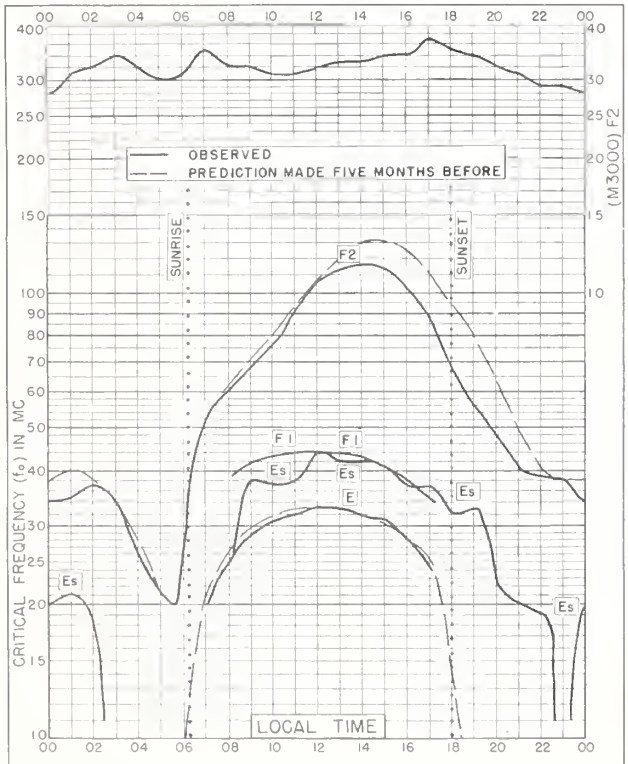


Fig. 15. FORMOSA, CHINA
25.0°N, 121.5°E MARCH 1954

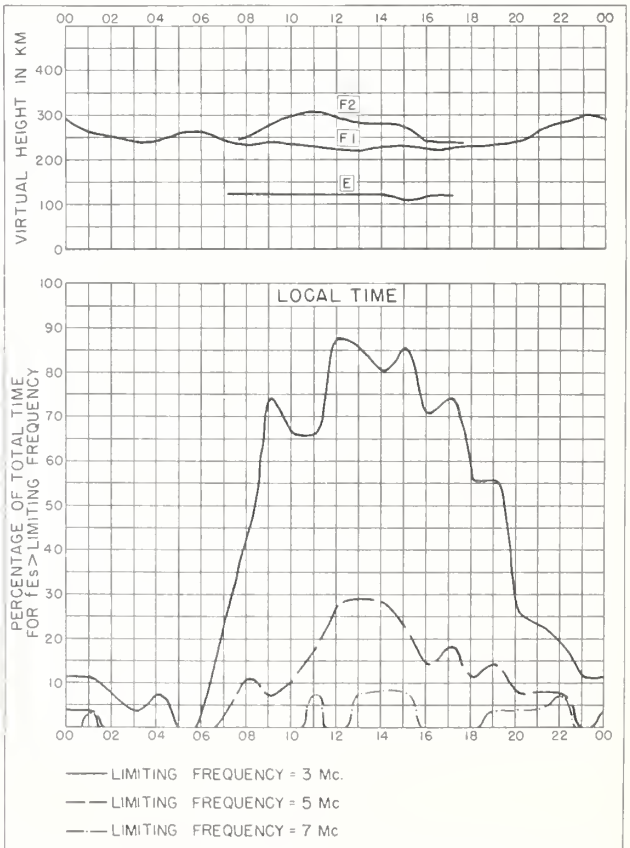


Fig. 16. FORMOSA, CHINA MARCH 1954

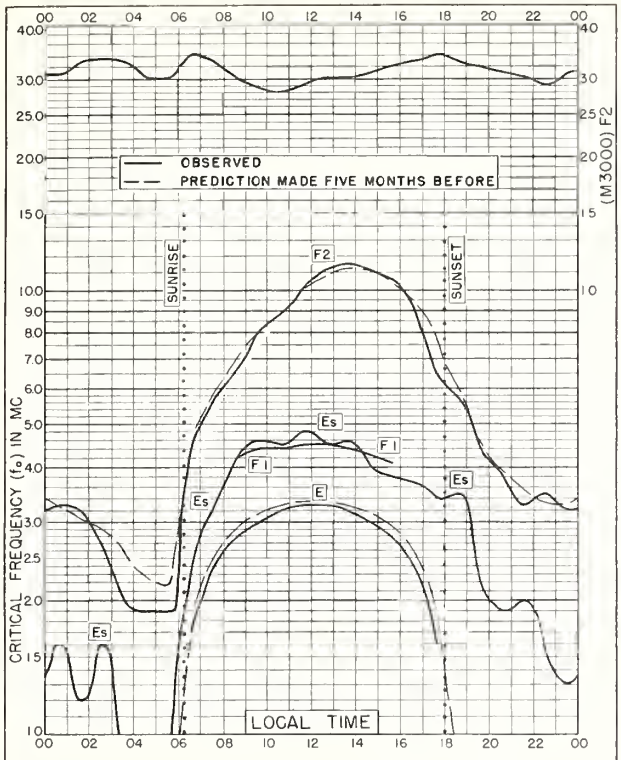


Fig. 17. MAUI, HAWAII
20.8°N, 156.5°W MARCH 1954

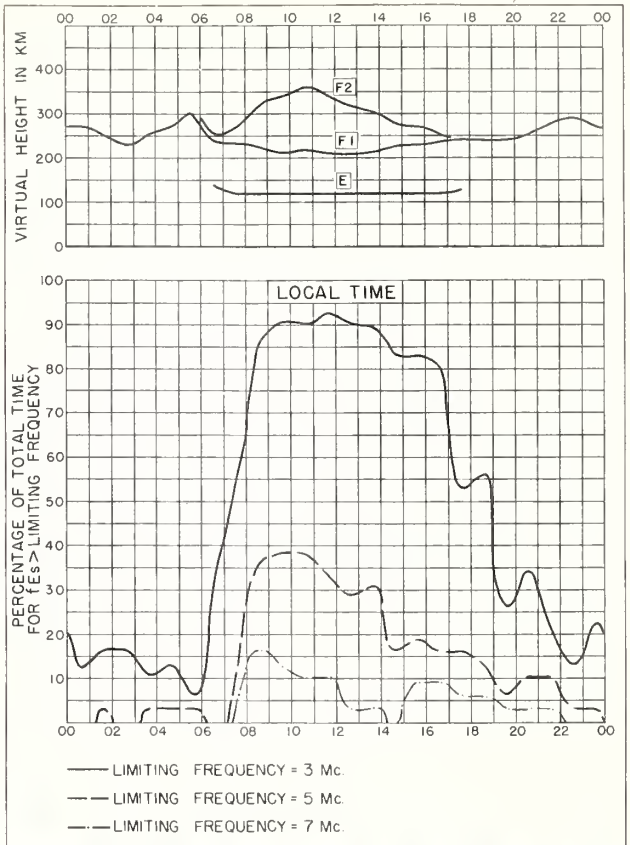


Fig. 18. MAUI, HAWAII MARCH 1954

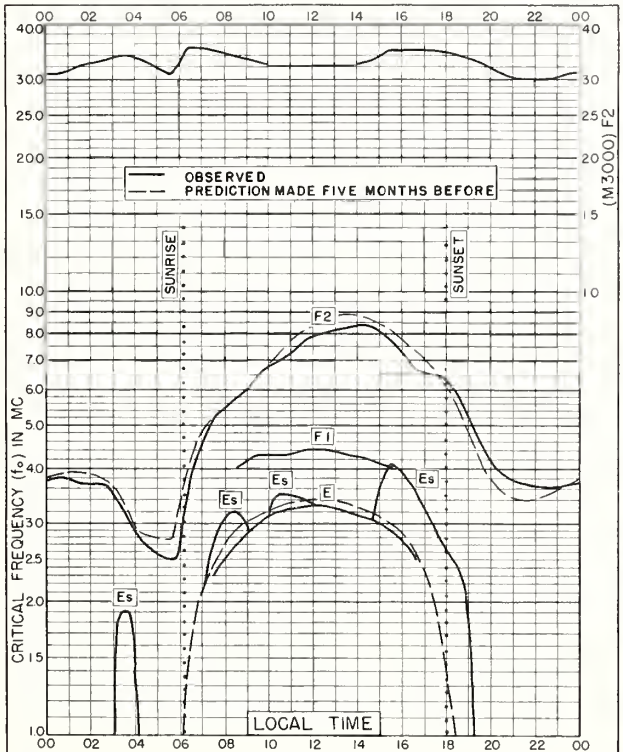


Fig. 19. PUERTO RICO, W.I.
18.5°N, 67.2°W MARCH 1954

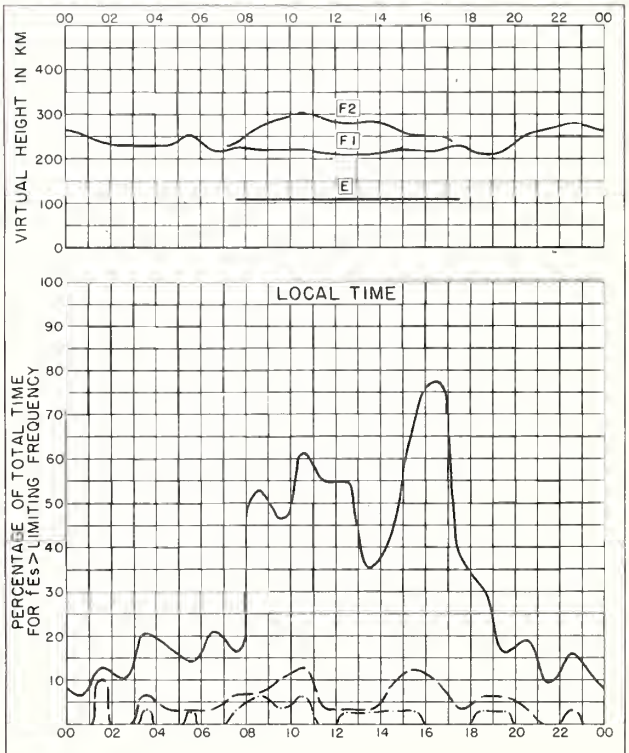


Fig. 20. PUERTO RICO, W.I. MARCH 1954

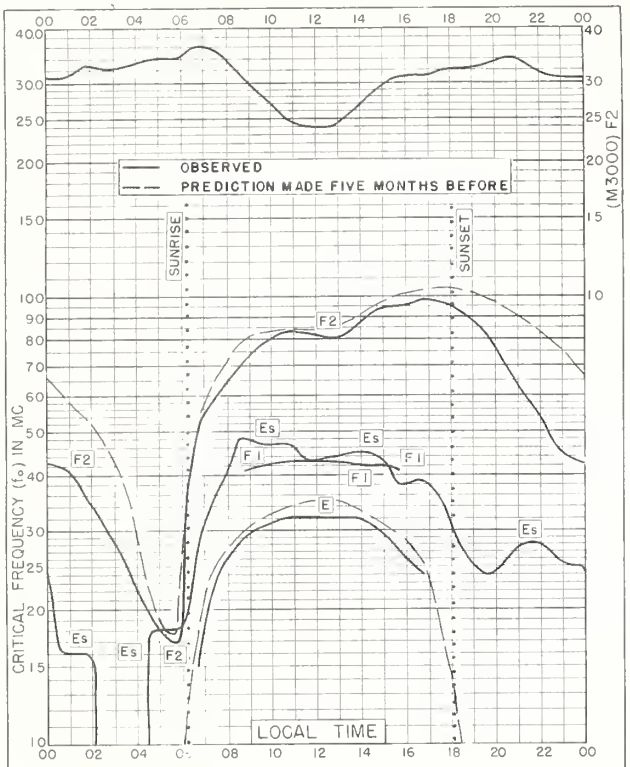


Fig. 21. GUAM I.
13.6°N, 144.9°E MARCH 1954

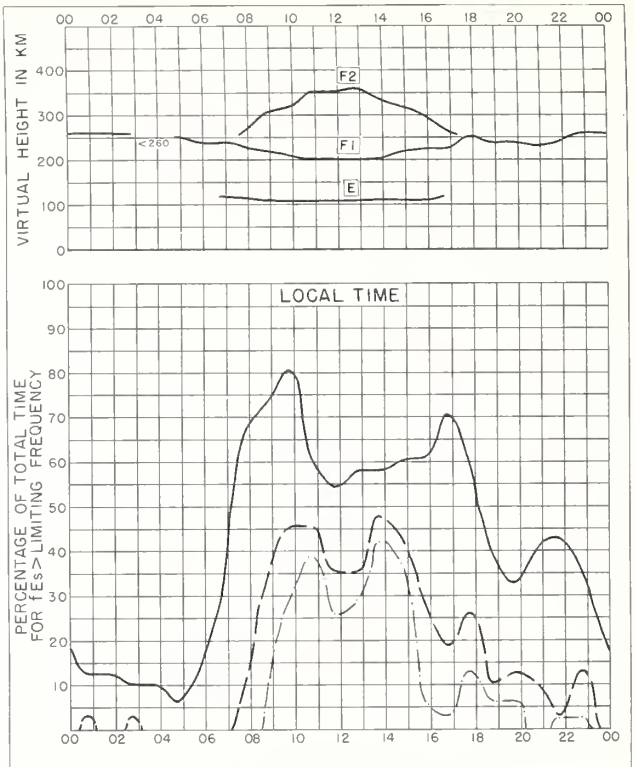


Fig. 22. GUAM I. MARCH 1954

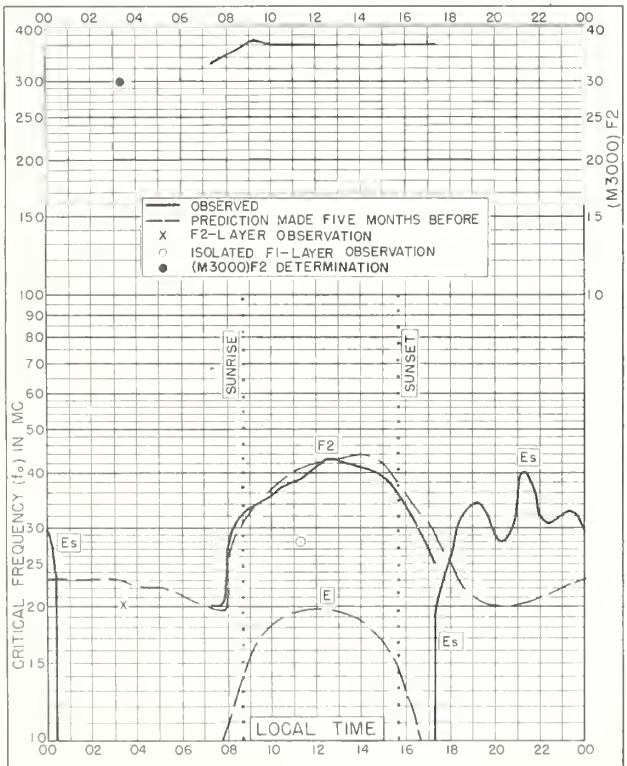


Fig. 23. KIRUNA, SWEDEN
67.8°N, 20.3°E FEBRUARY 1954

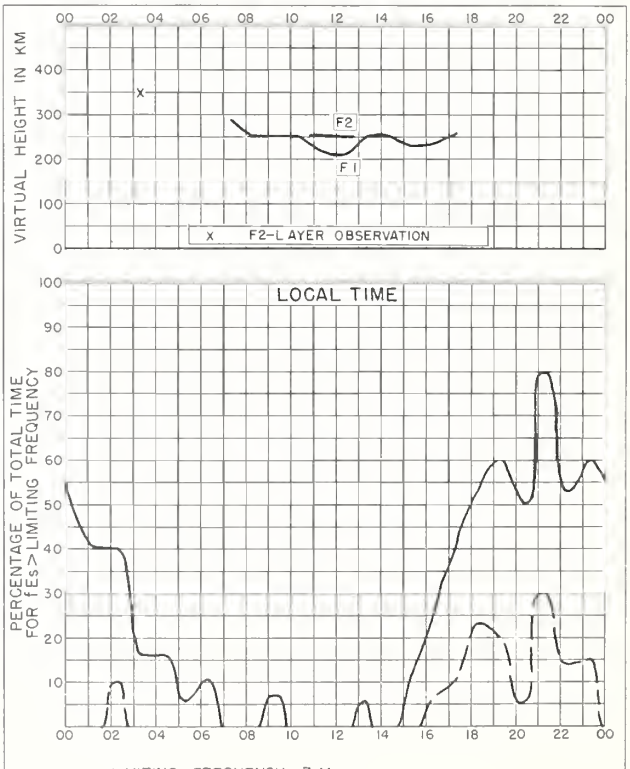


Fig. 24. KIRUNA, SWEDEN FEBRUARY 1954

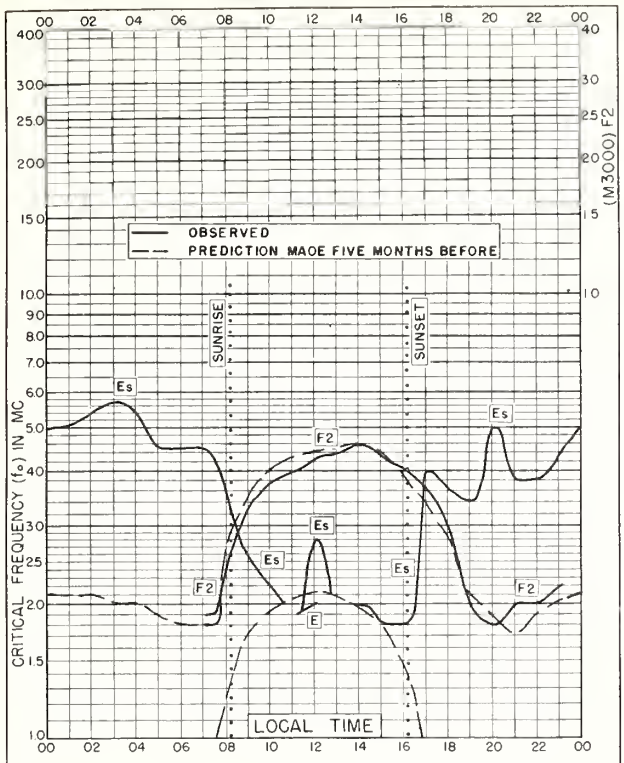


Fig. 25. FAIRBANKS, ALASKA
64.9°N, 147.8°W FEBRUARY 1954

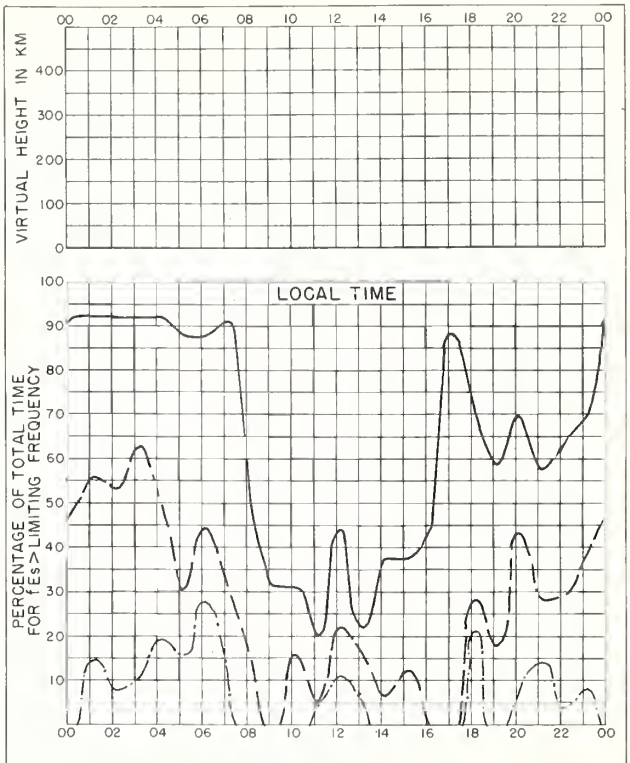


Fig. 26. FAIRBANKS, ALASKA FEBRUARY 1954

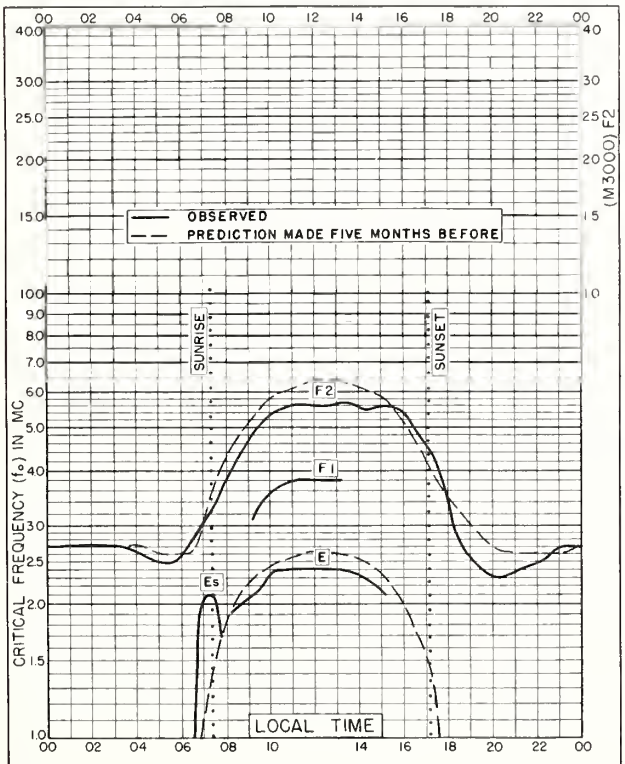


Fig. 27. ADAK, ALASKA
51.9°N, 176.6° W FEBRUARY 1954

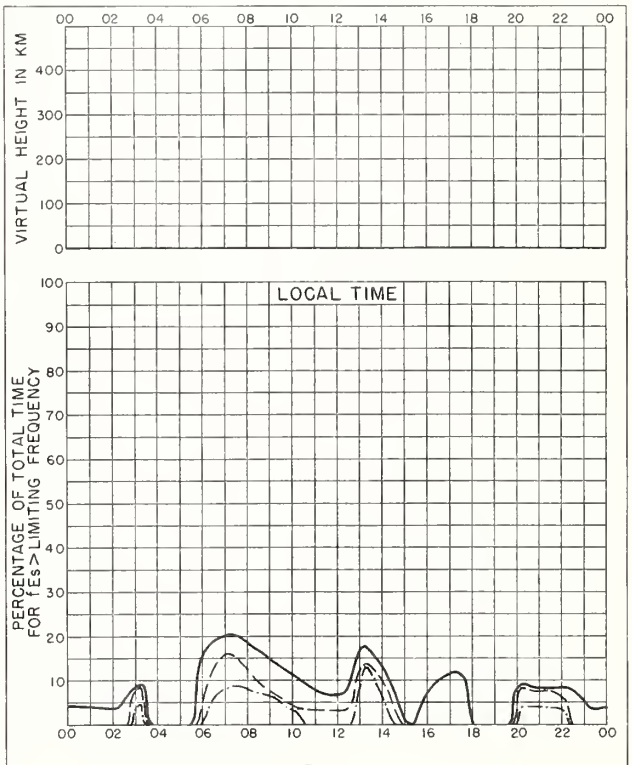


Fig. 28. ADAK, ALASKA FEBRUARY 1954

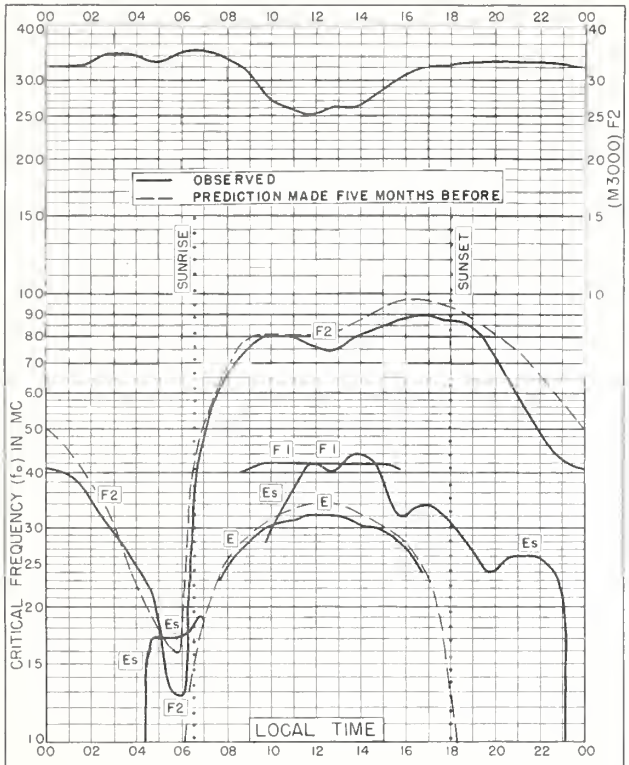


Fig. 29. GUAM I.
13.6°N, 144.9°E FEBRUARY 1954

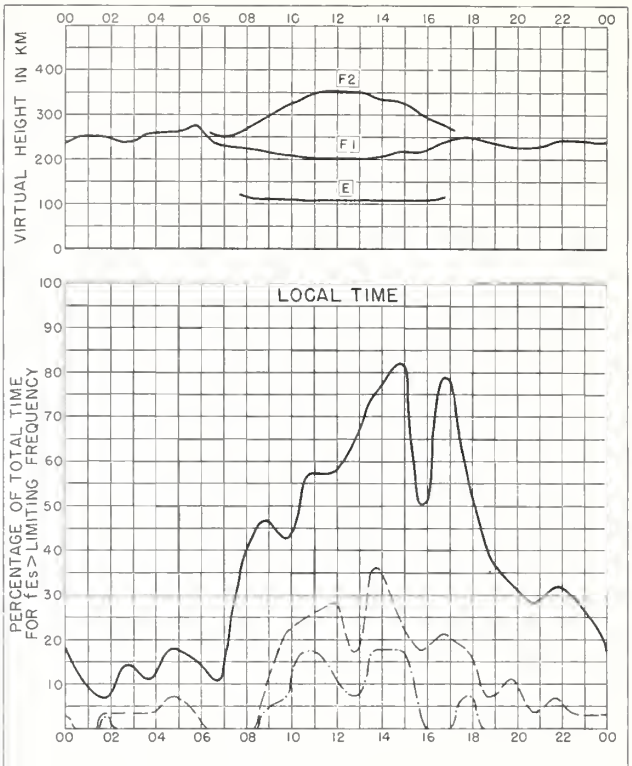


Fig. 30. GUAM I. FEBRUARY 1954

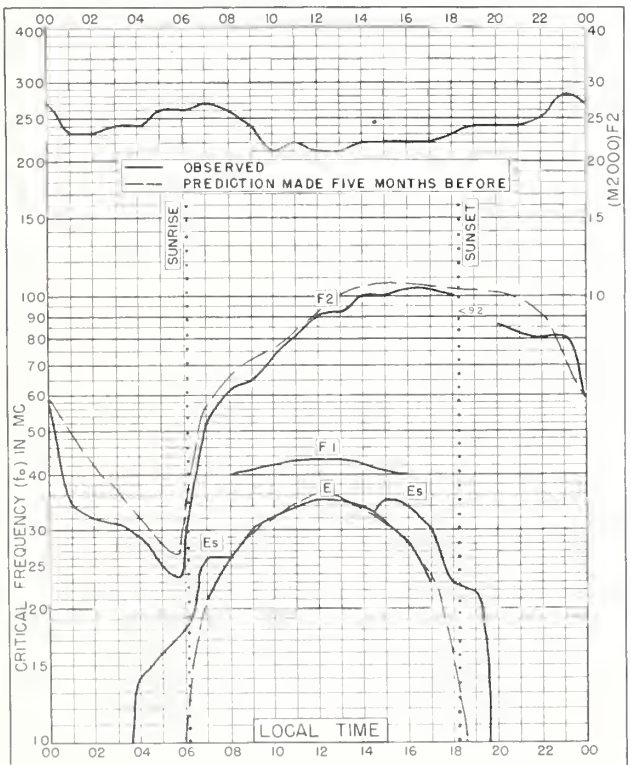


Fig. 31. LEOPOLDVILLE, BELGIAN CONGO
4.3°S, 15.3°E FEBRUARY 1954

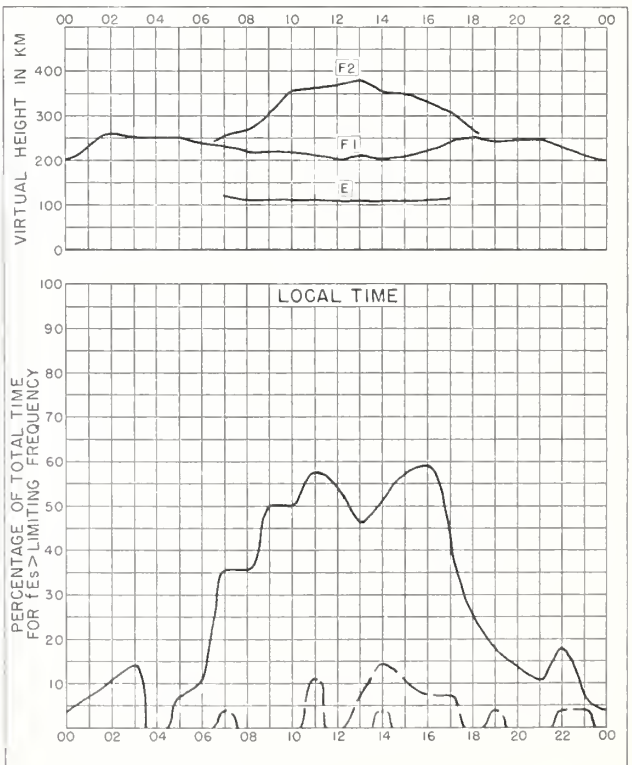


Fig. 32. LEOPOLDVILLE, BELGIAN CONGO FEBRUARY 1954

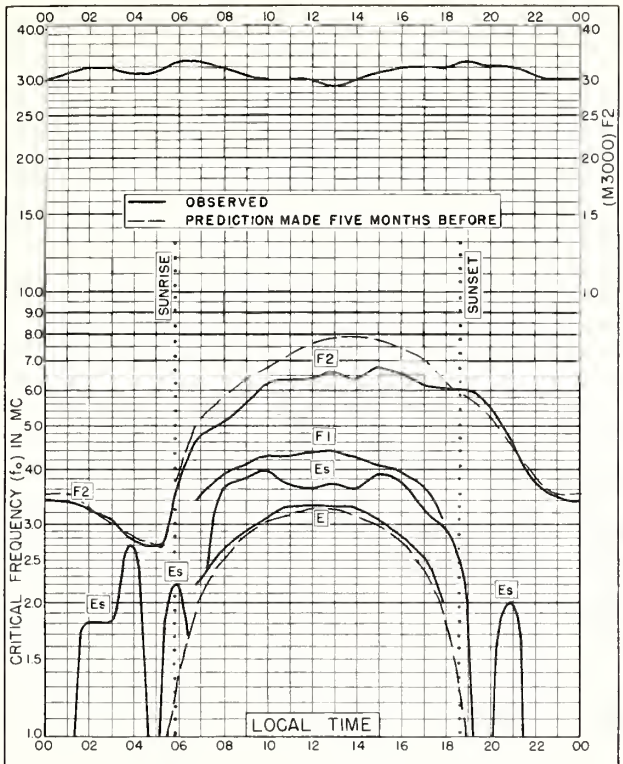
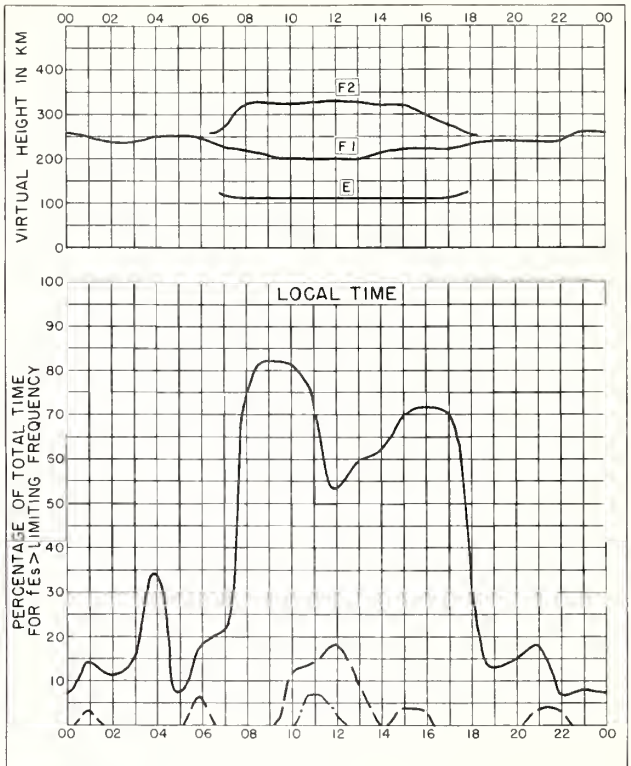


Fig. 33. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E FEBRUARY 1954



FEBRUARY 1954
Fig. 34. JOHANNESBURG, UNION OF S. AFRICA

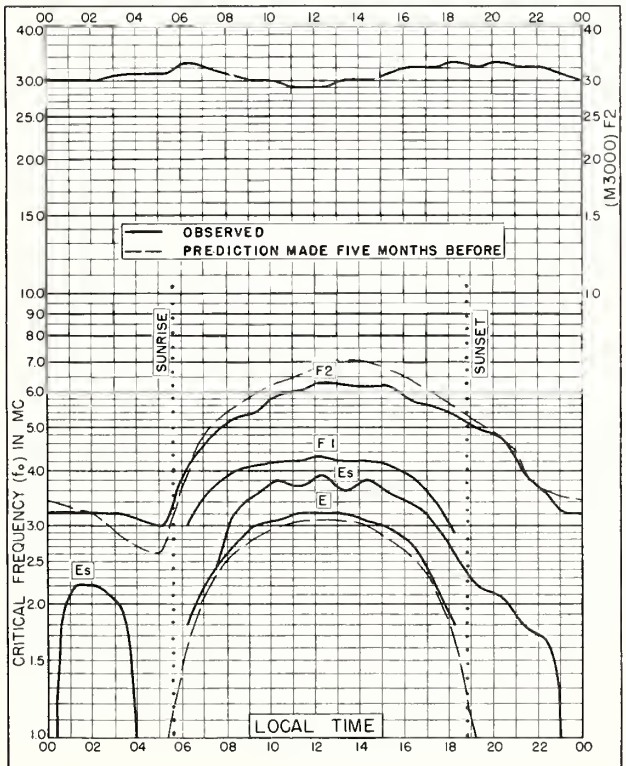
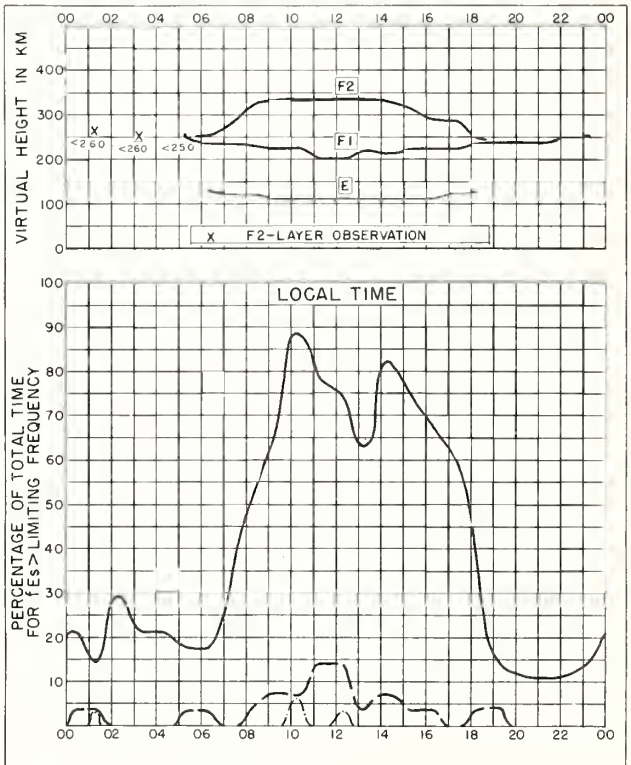


Fig. 35. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E FEBRUARY 1954



FEBRUARY 1954
Fig. 36. CAPETOWN, UNION OF S. AFRICA

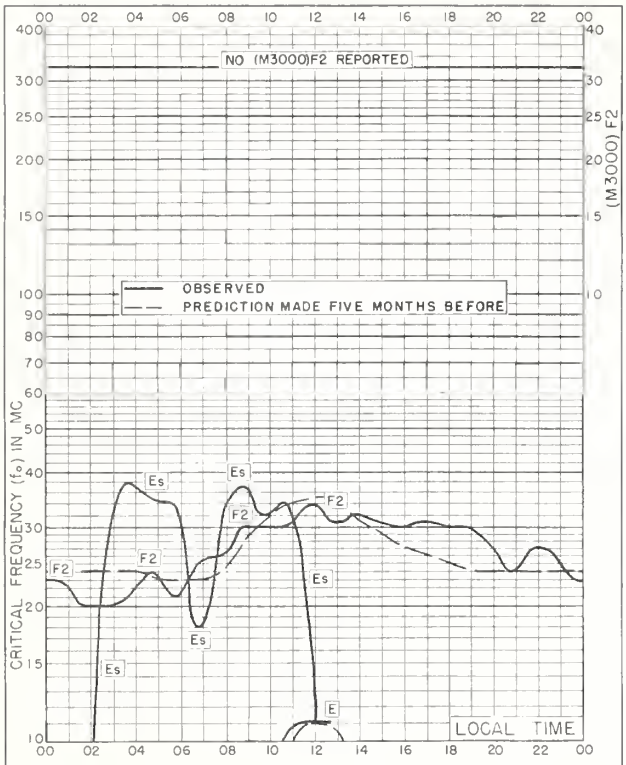


Fig. 37. RESOLUTE BAY, CANADA
74.7°N, 94.9°W JANUARY 1954

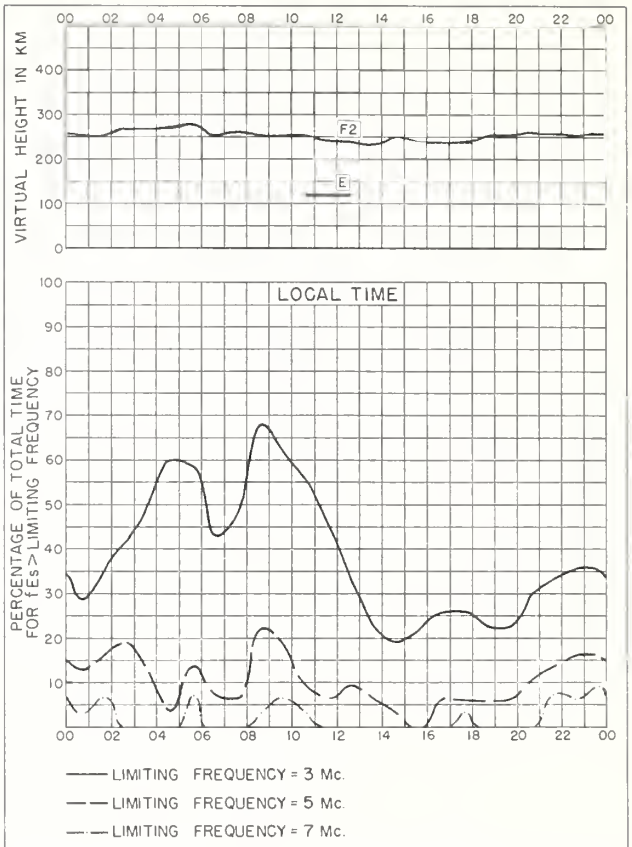


Fig. 38. RESOLUTE BAY, CANADA JANUARY 1954

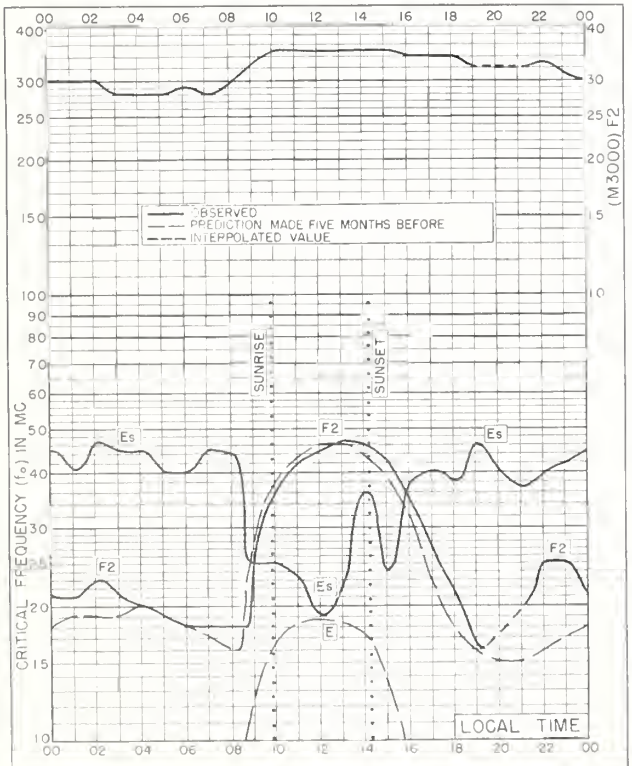


Fig. 39. FAIRBANKS, ALASKA
64.9°N, 147.8°W JANUARY 1954

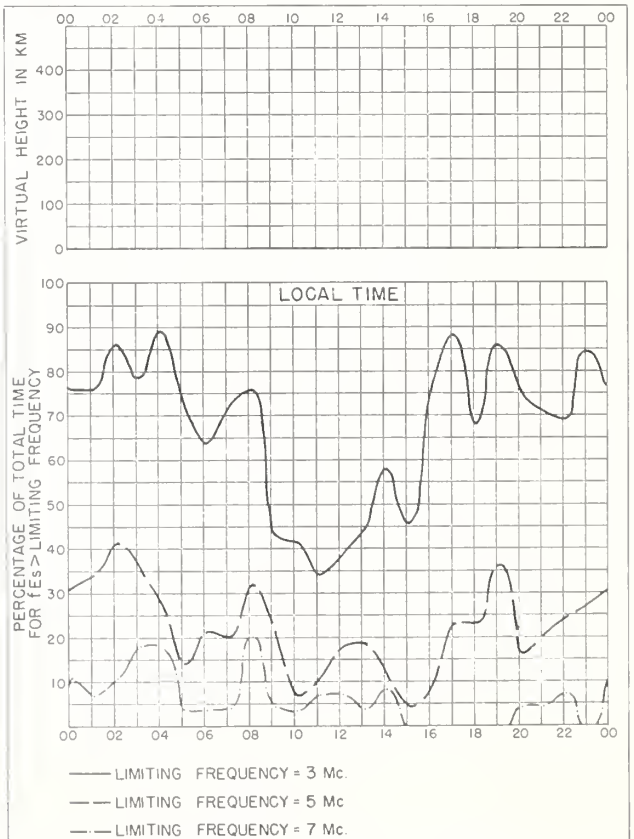


Fig. 40. FAIRBANKS, ALASKA JANUARY 1954

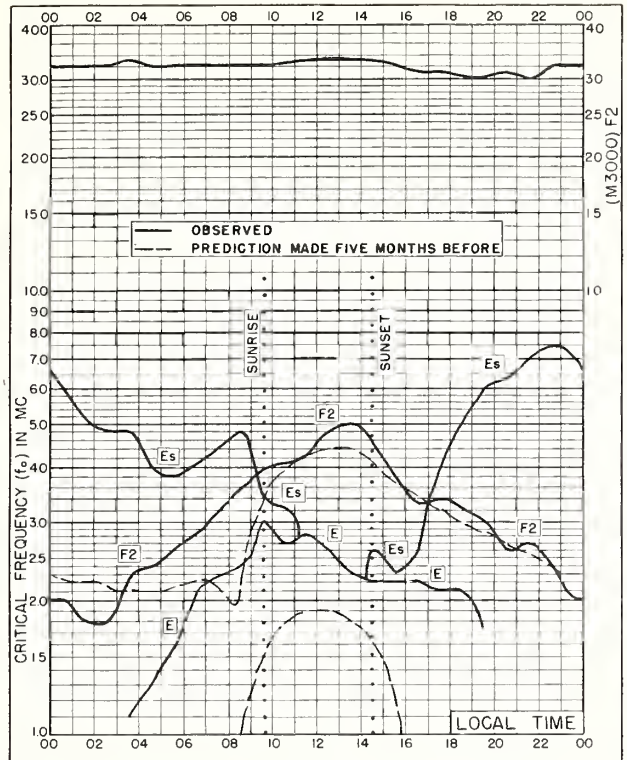


Fig. 41. BAKER LAKE, CANADA
64.3°N, 96.0°W JANUARY 1954

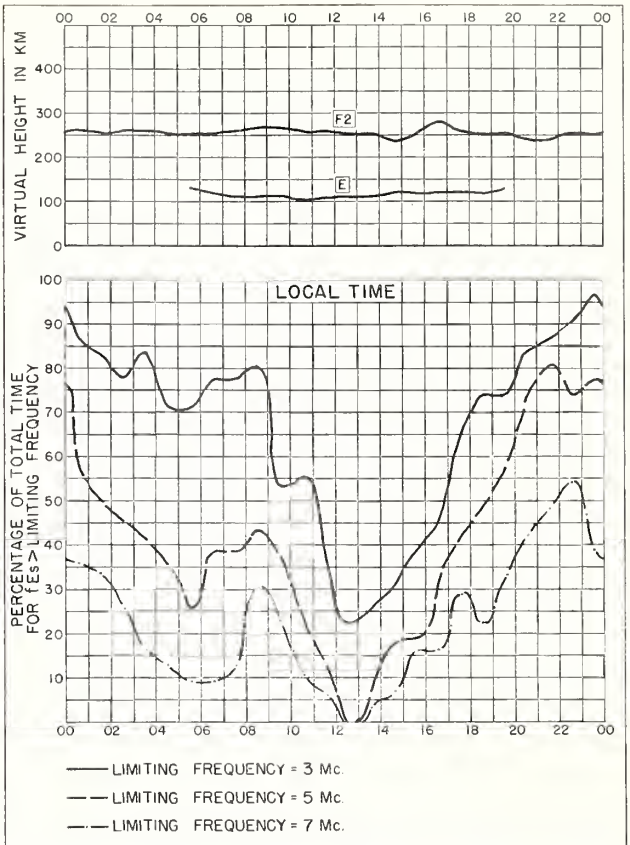


Fig. 42. BAKER LAKE, CANADA JANUARY 1954

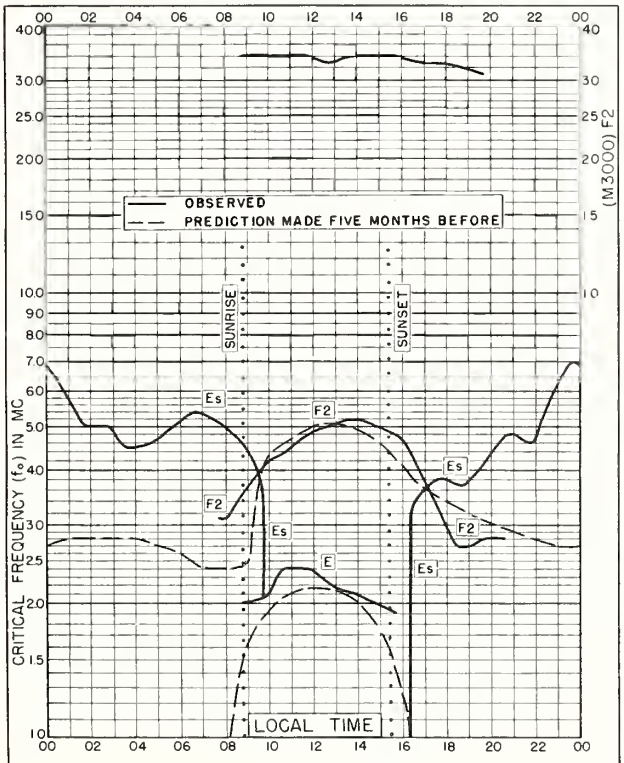


Fig. 43. CHURCHILL, CANADA
58.8°N, 94.2°W JANUARY 1954

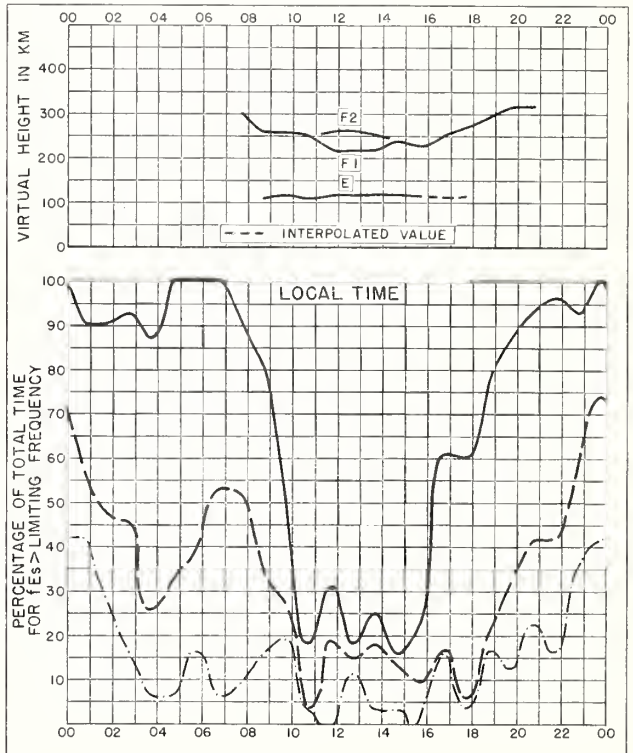


Fig. 44. CHURCHILL, CANADA JANUARY 1954

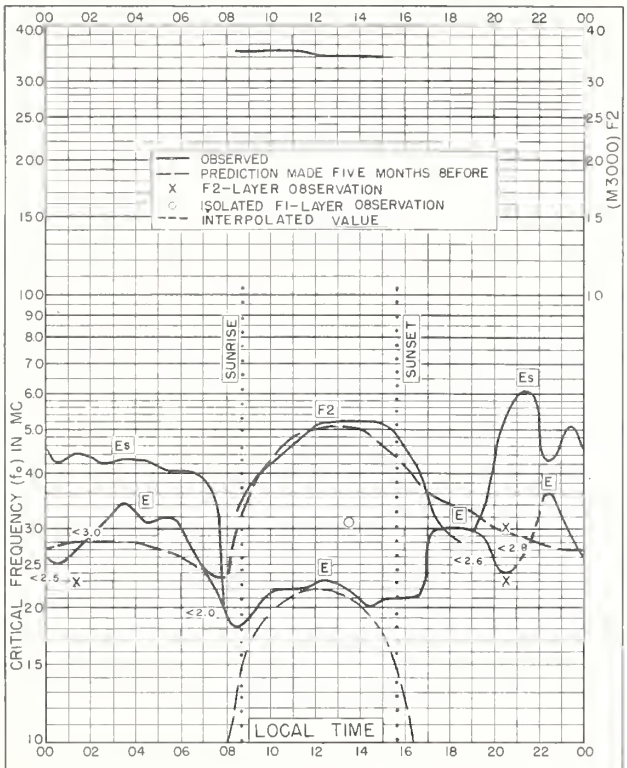


Fig. 45. FORT CHIMO, CANADA
58.1°N, 68.3° W JANUARY 1954

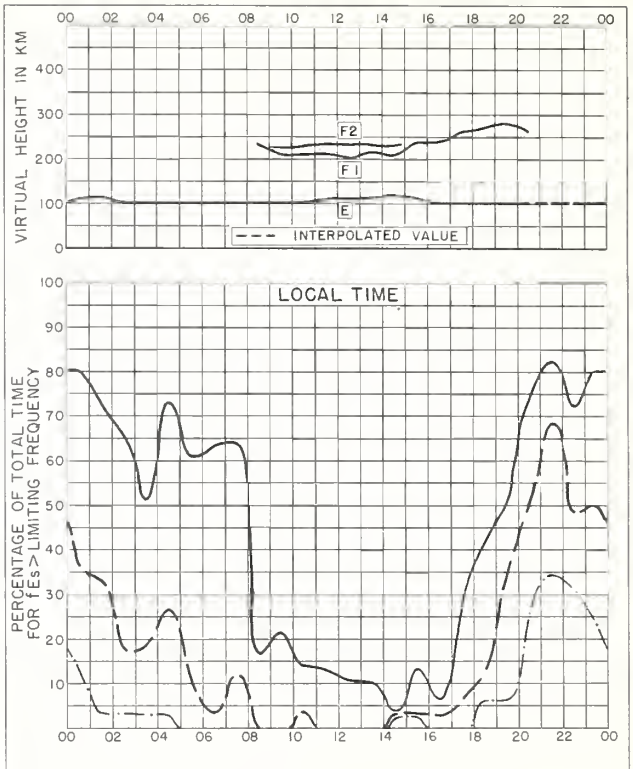


Fig. 46. FORT CHIMO, CANADA JANUARY 1954

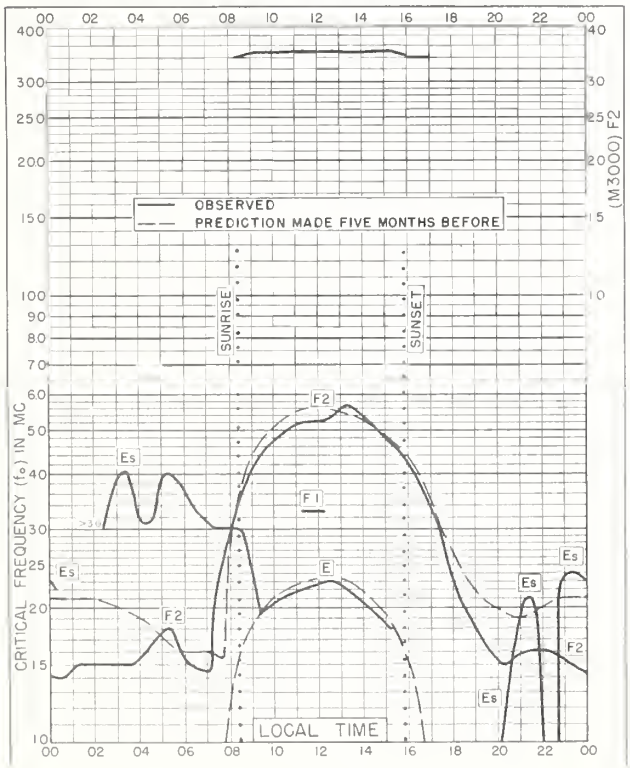


Fig. 47. PRINCE RUPERT, CANADA
54.3°N, 130.3°W JANUARY 1954

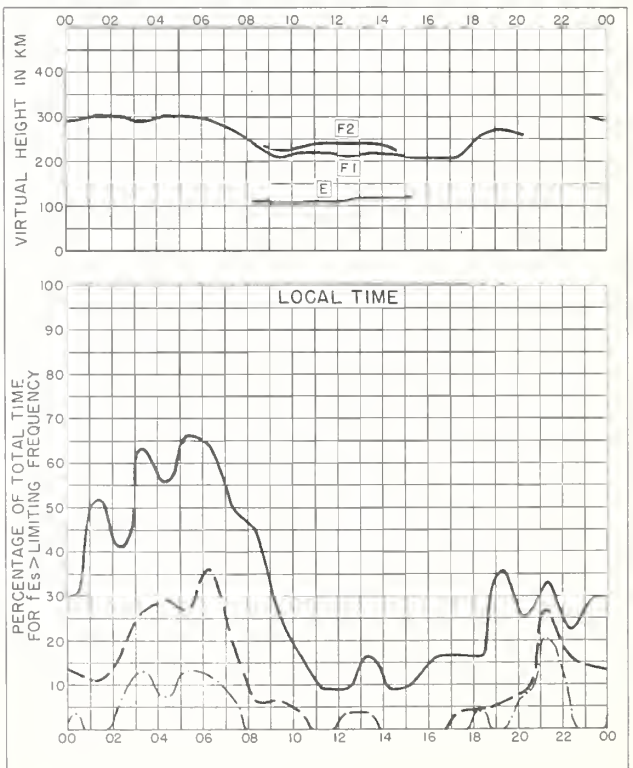


Fig. 48. PRINCE RUPERT, CANADA JANUARY 1954

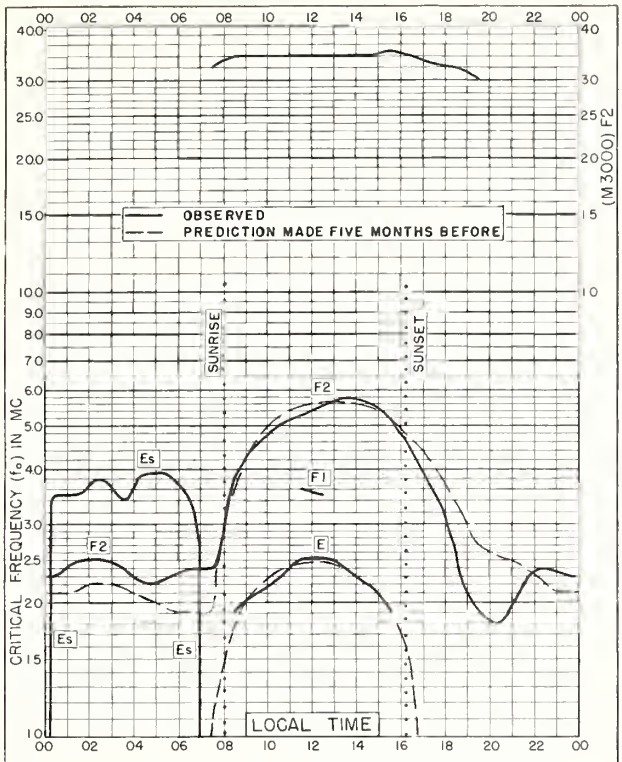


Fig. 49. WINNIPEG, CANADA
49.9° N, 97.4° W JANUARY 1954

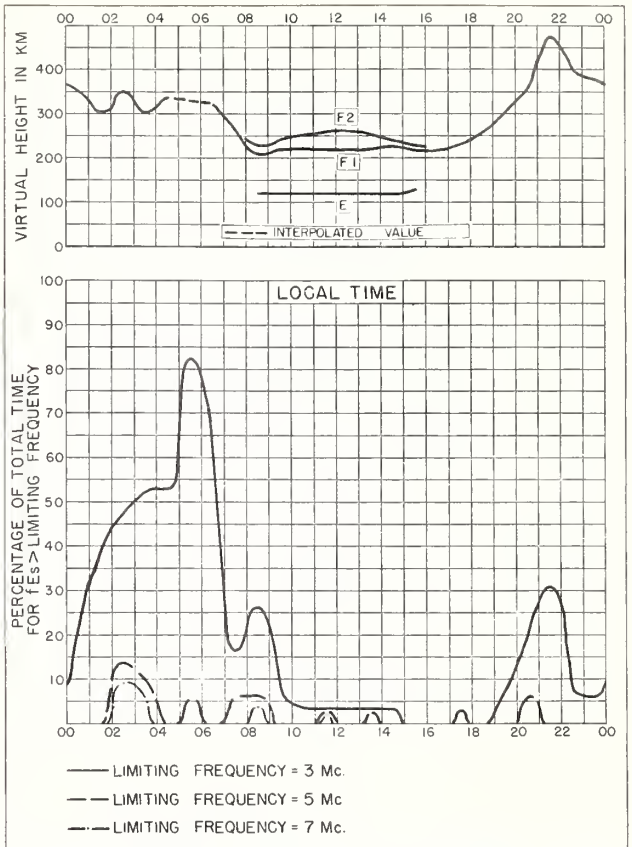


Fig. 50. WINNIPEG, CANADA JANUARY 1954

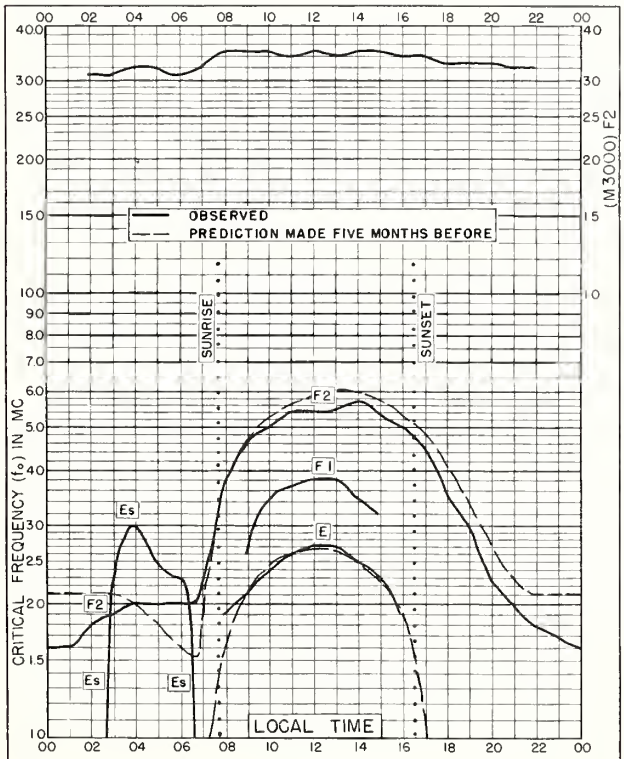


Fig. 51. OTTAWA, CANADA
45.4°N, 75.9°W JANUARY 1954

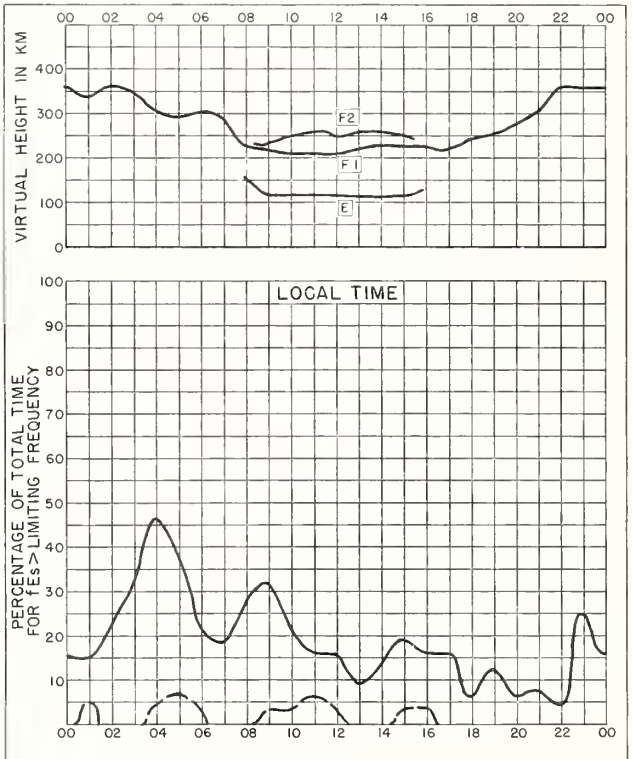


Fig. 52. OTTAWA, CANADA JANUARY 1954

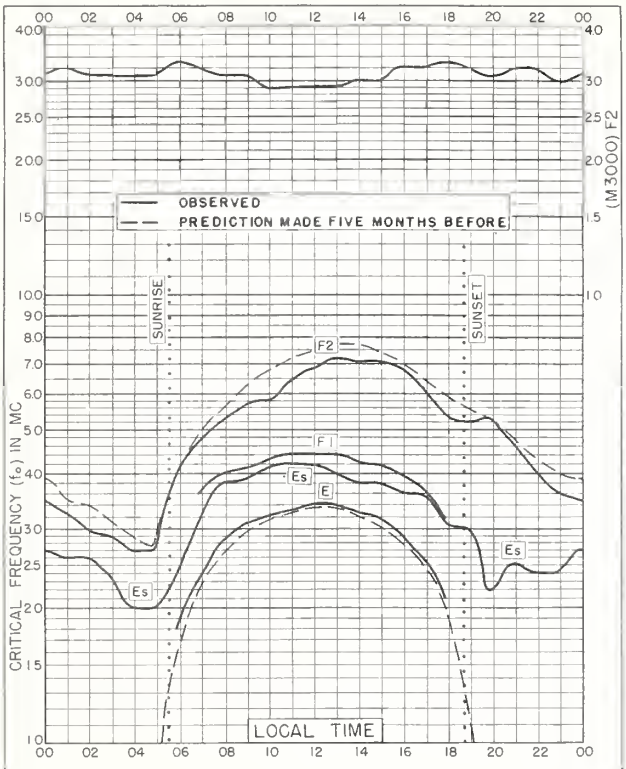


Fig. 53. JOHANNESBURG, UNION OF S. AFRICA
26.2° S, 28.1° E JANUARY 1954

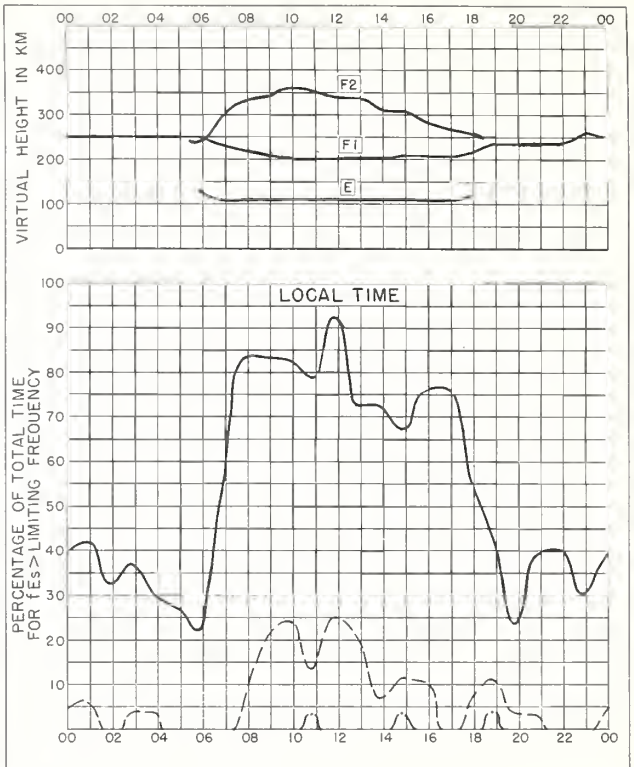


Fig. 54. JOHANNESBURG, UNION OF S. AFRICA

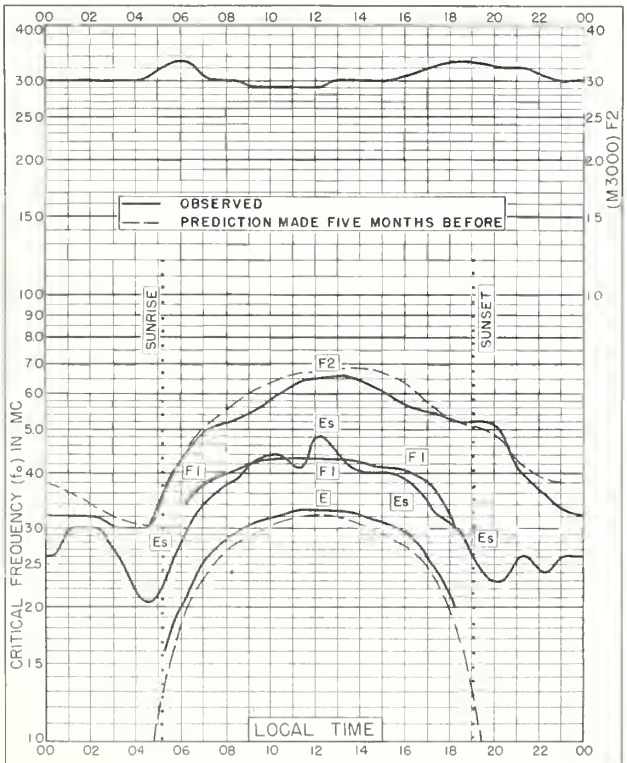


Fig. 55. CAPETOWN, UNION OF S. AFRICA
34.2° S, 18.3° E JANUARY 1954

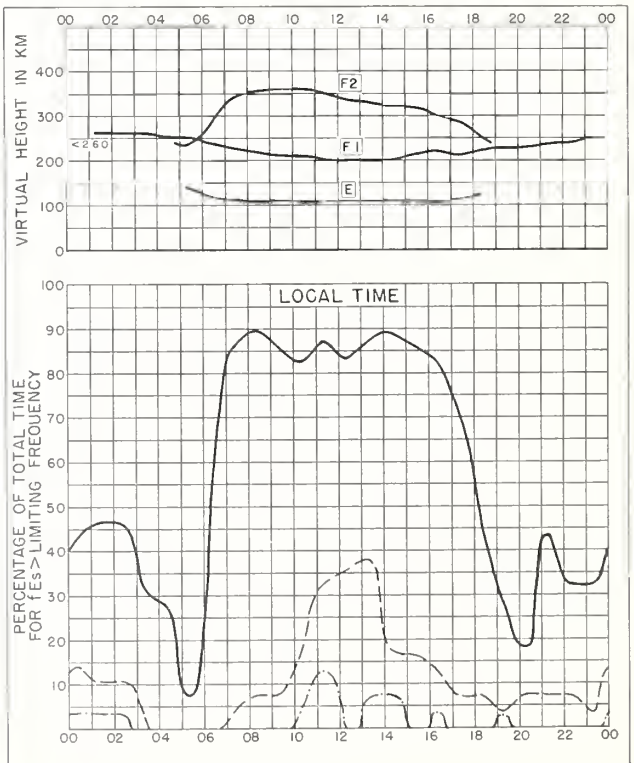


Fig. 56. CAPETOWN, UNION OF S. AFRICA

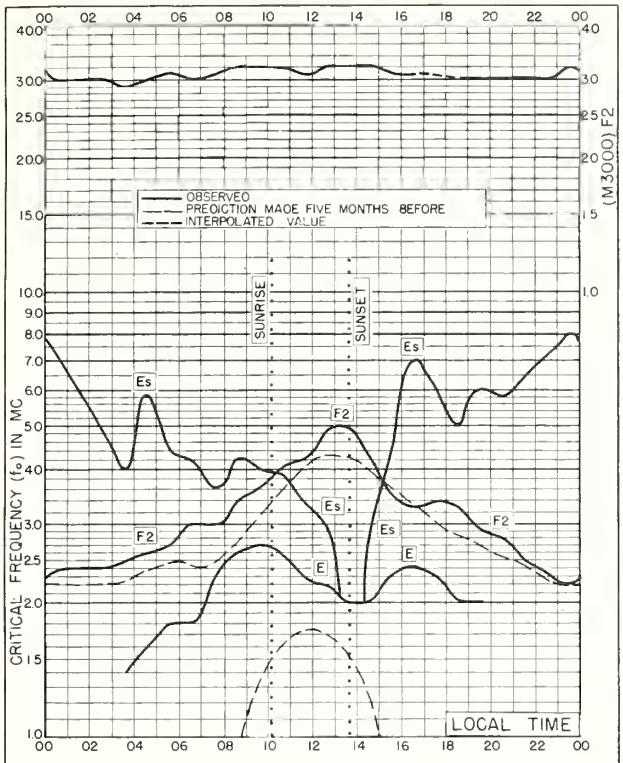


Fig. 57. BAKER LAKE, CANADA
64.3°N, 96.0°W DECEMBER 1953

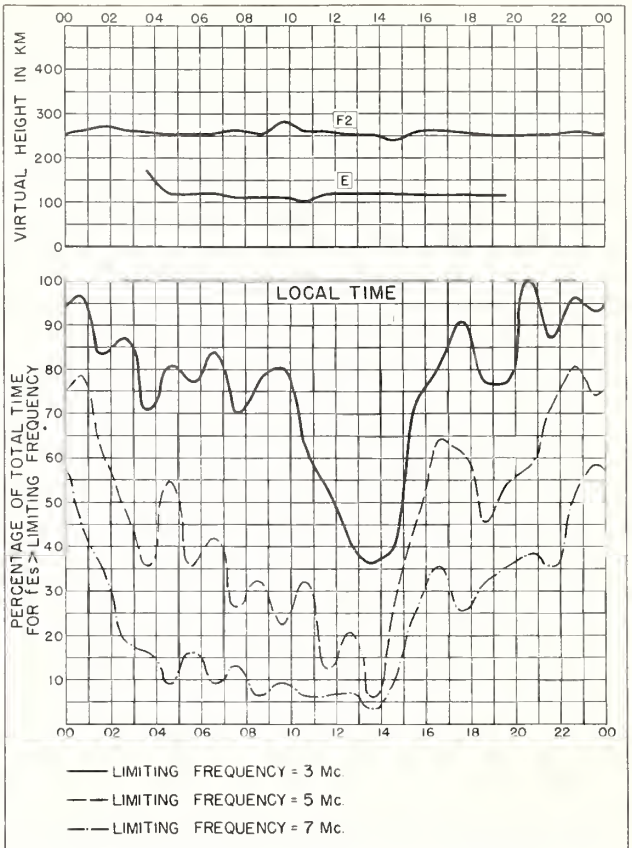


Fig. 58. BAKER LAKE, CANADA DECEMBER 1953

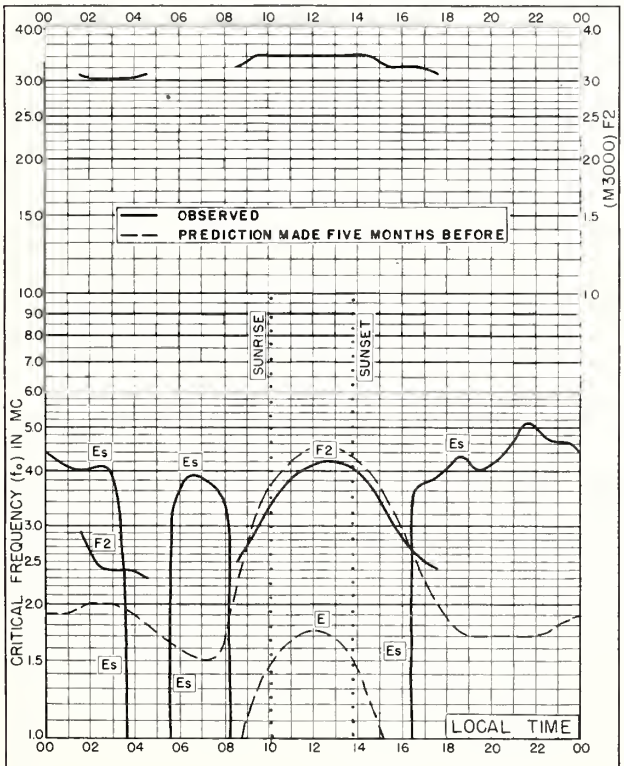


Fig. 59. REYKJAVIK, ICELAND
64.1°N, 21.8°W DECEMBER 1953

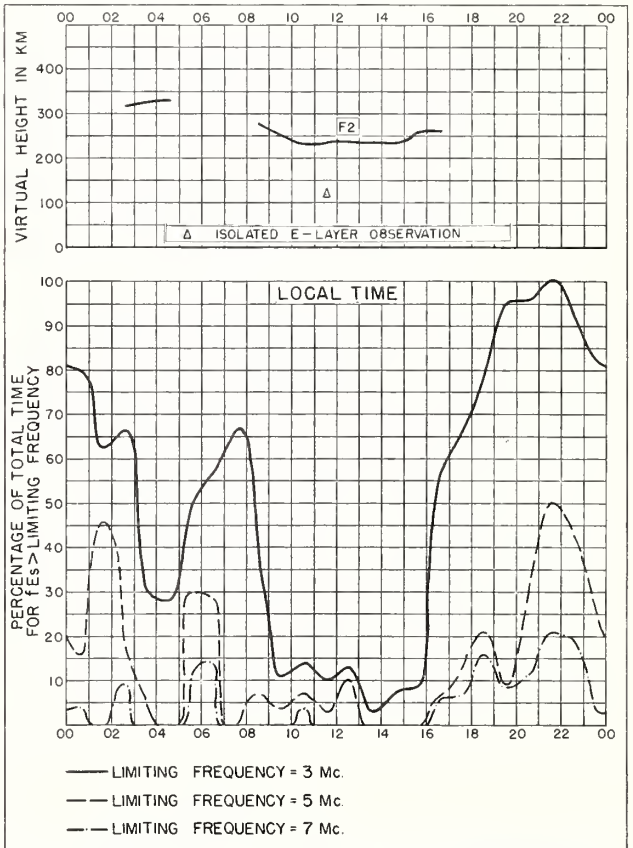


Fig. 60. REYKJAVIK, ICELAND DECEMBER 1953

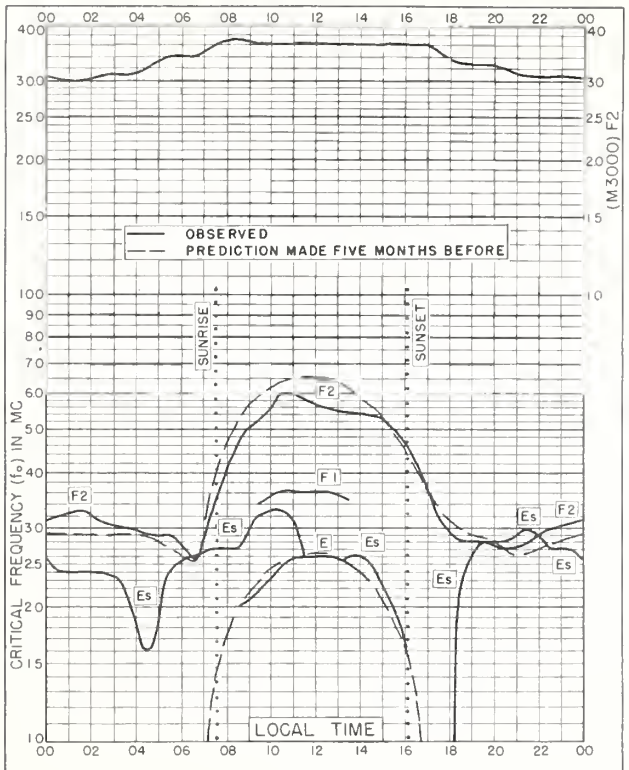


Fig. 61. WAKKANAI, JAPAN
45.4°N, 141.7°E DECEMBER 1953

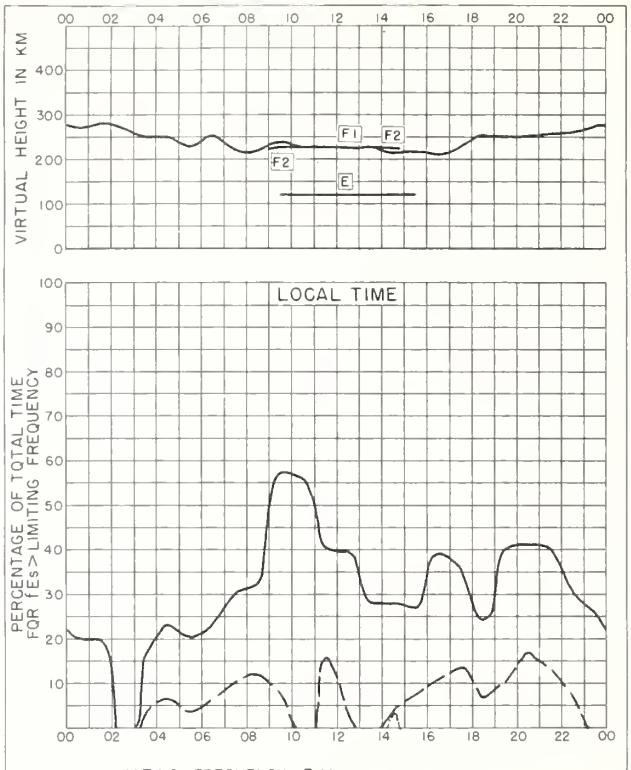


Fig. 62. WAKKANAI, JAPAN DECEMBER 1953

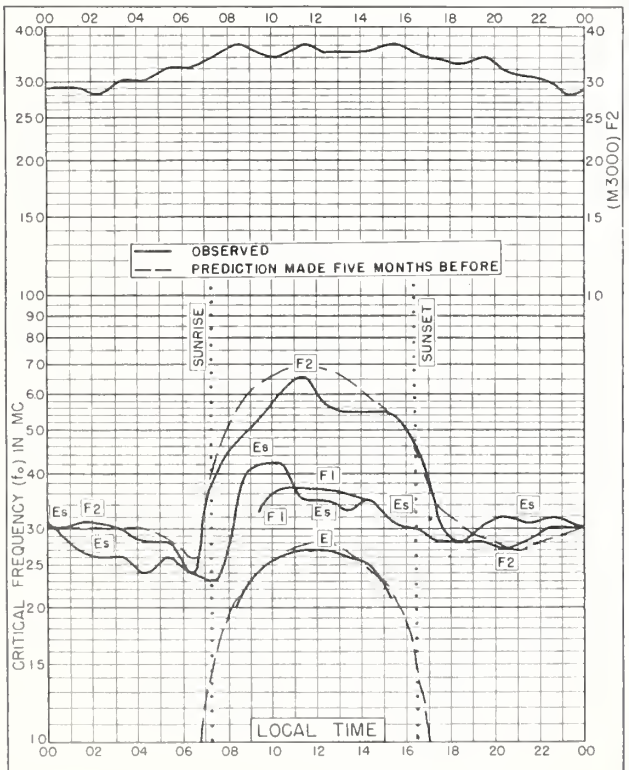


Fig. 63. AKITA, JAPAN
39.7°N, 140.1°E DECEMBER 1953

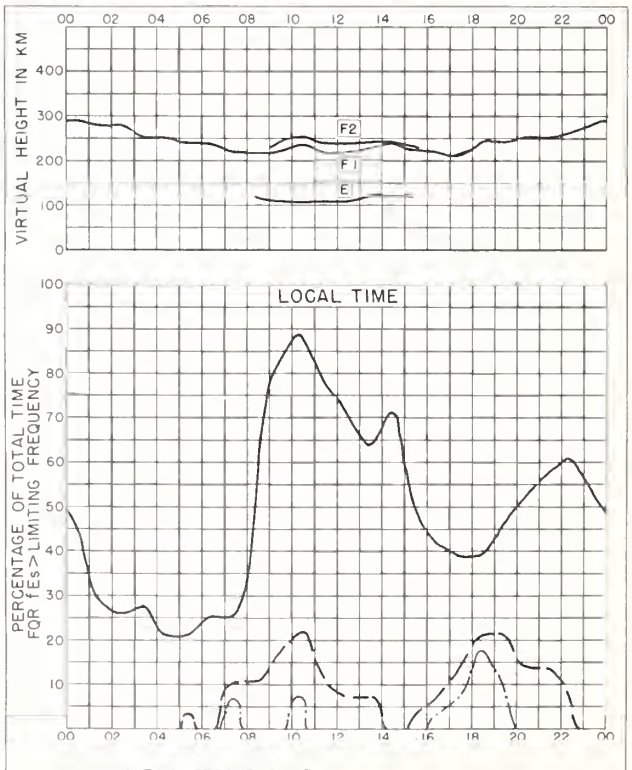


Fig. 64. AKITA, JAPAN DECEMBER 1953

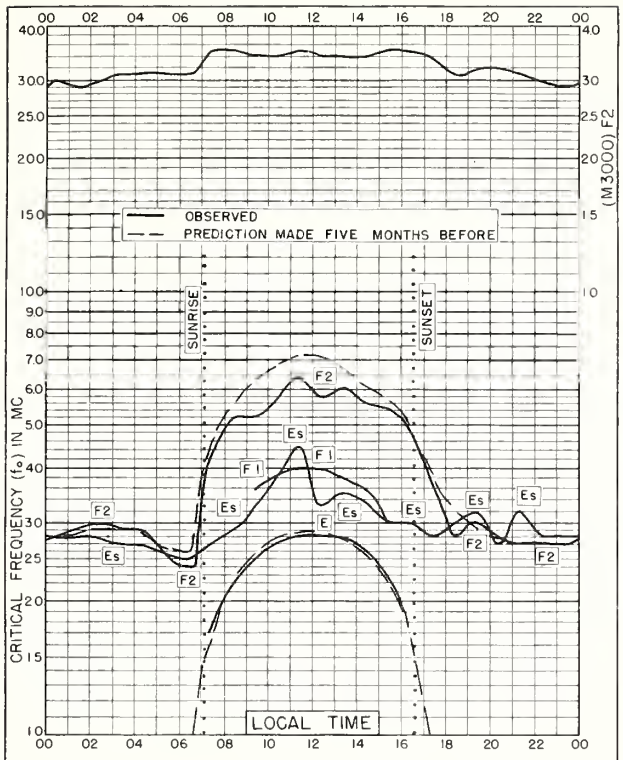


Fig. 65. TOKYO, JAPAN
35.7°N, 139.5°E DECEMBER 1953

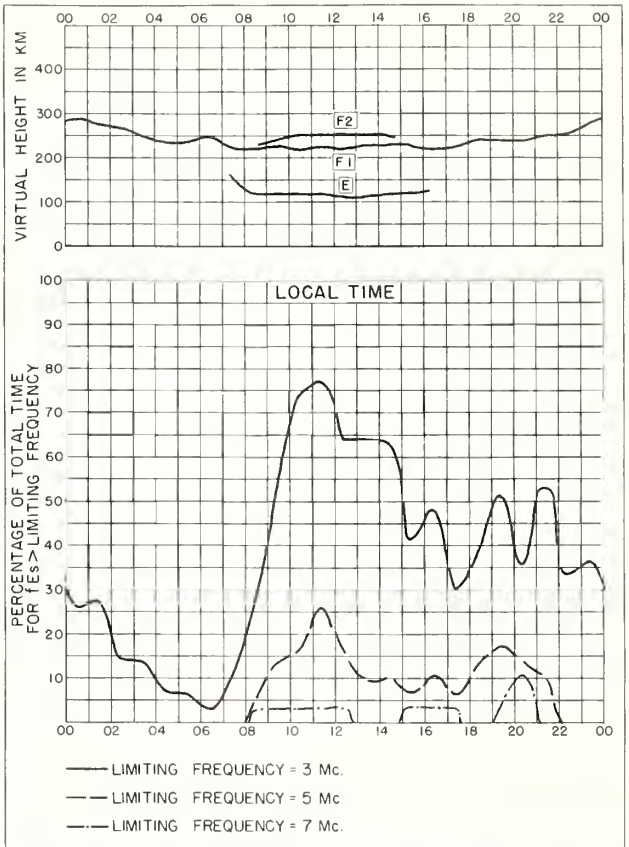


Fig. 66. TOKYO, JAPAN DECEMBER 1953

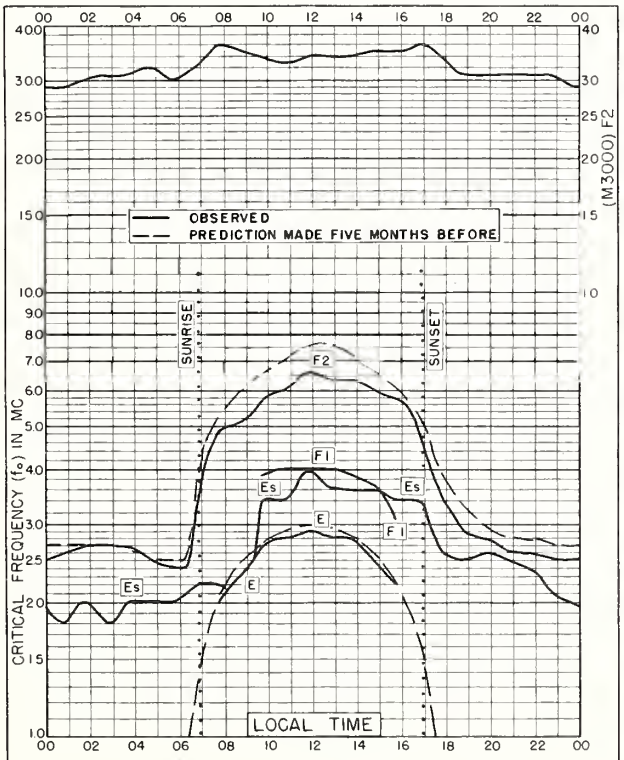


Fig. 67. YAMAGAWA, JAPAN
31.2°N, 130.6°E DECEMBER 1953

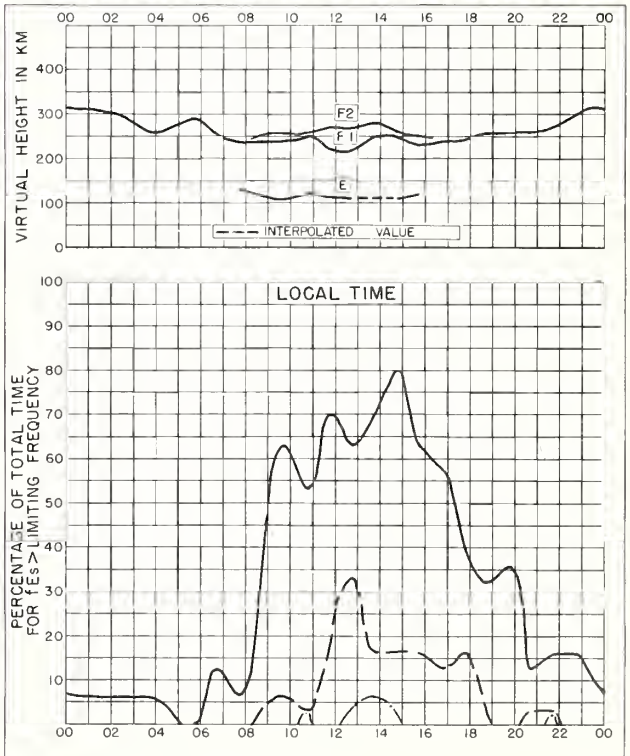


Fig. 68. YAMAGAWA, JAPAN DECEMBER 1953

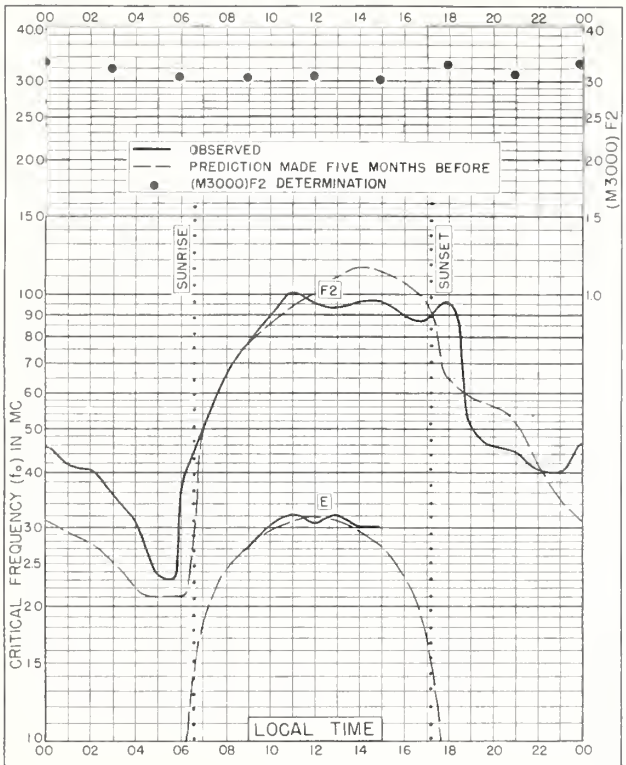


Fig. 69. CALCUTTA, INDIA
22.6°N, 88.4°E DECEMBER 1953

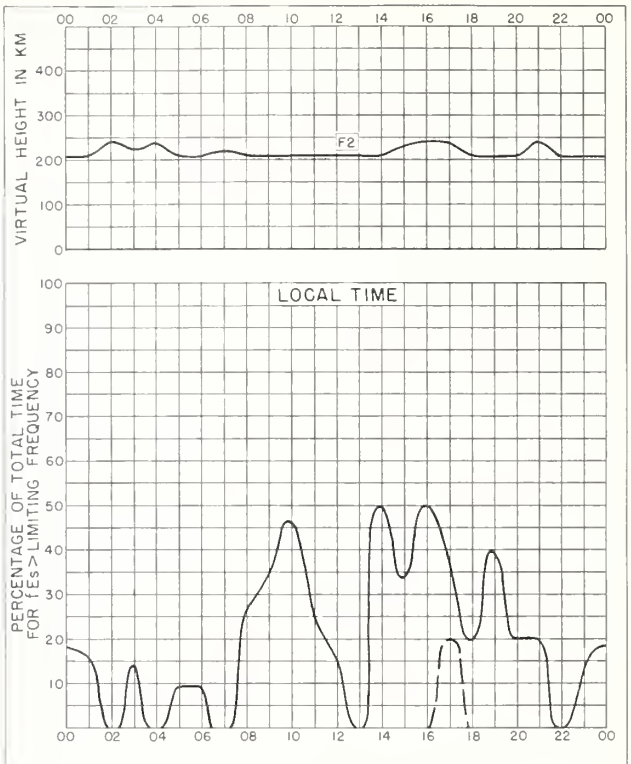


Fig. 70. CALCUTTA, INDIA DECEMBER 1953

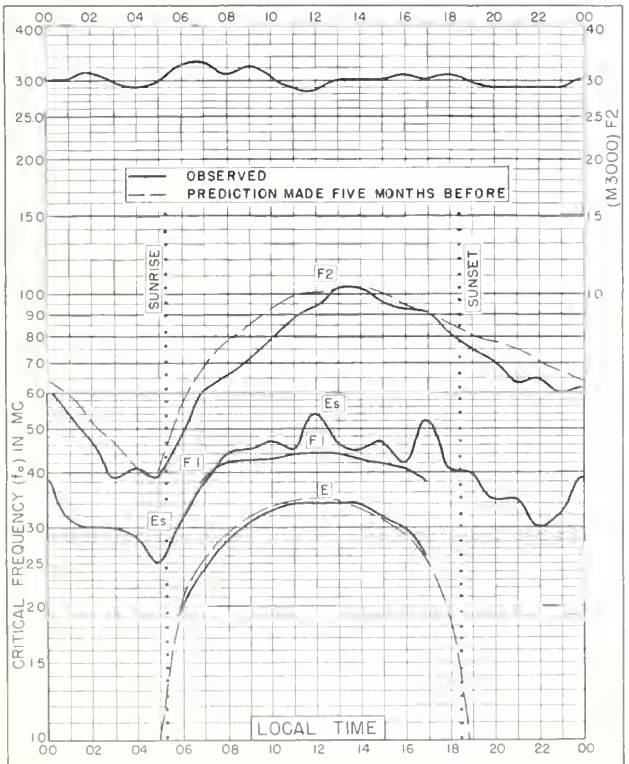


Fig. 71. RAROTONGA I.
21.3°S, 159.8°W DECEMBER 1953

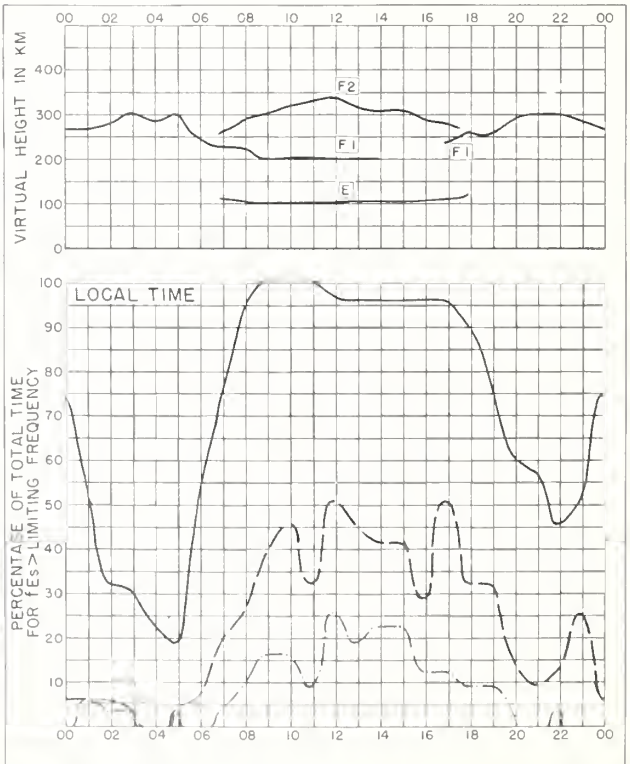


Fig. 72. RAROTONGA I. DECEMBER 1953

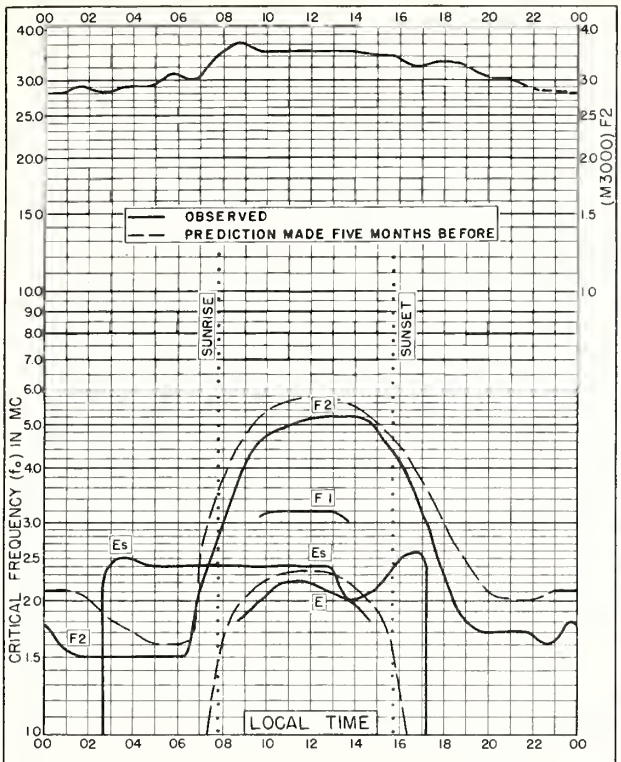


Fig. 73. INVERNESS, SCOTLAND
57.4° N, 4.2° W NOVEMBER 1953

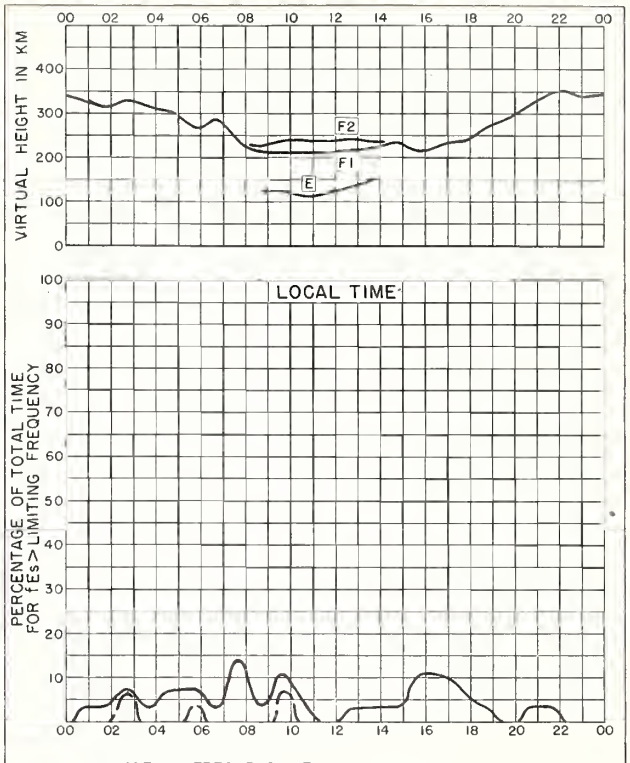


Fig. 74. INVERNESS, SCOTLAND NOVEMBER 1953

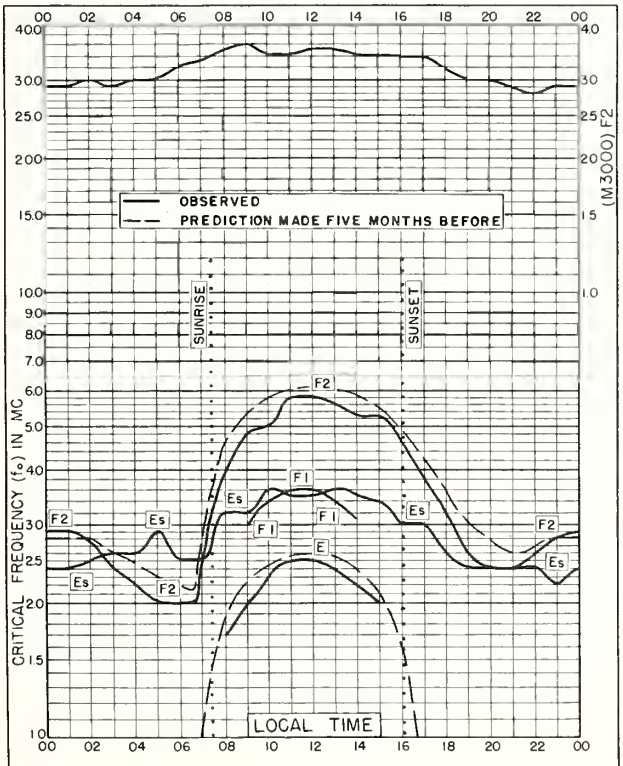


Fig. 75. SLOUGH, ENGLAND
51.5° N, 0.6° W NOVEMBER 1953

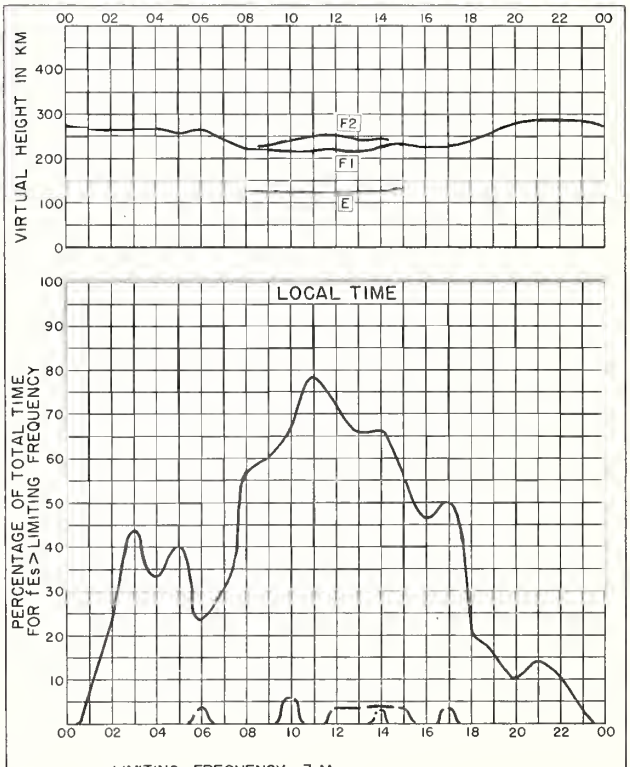


Fig. 76. SLOUGH, ENGLAND NOVEMBER 1953

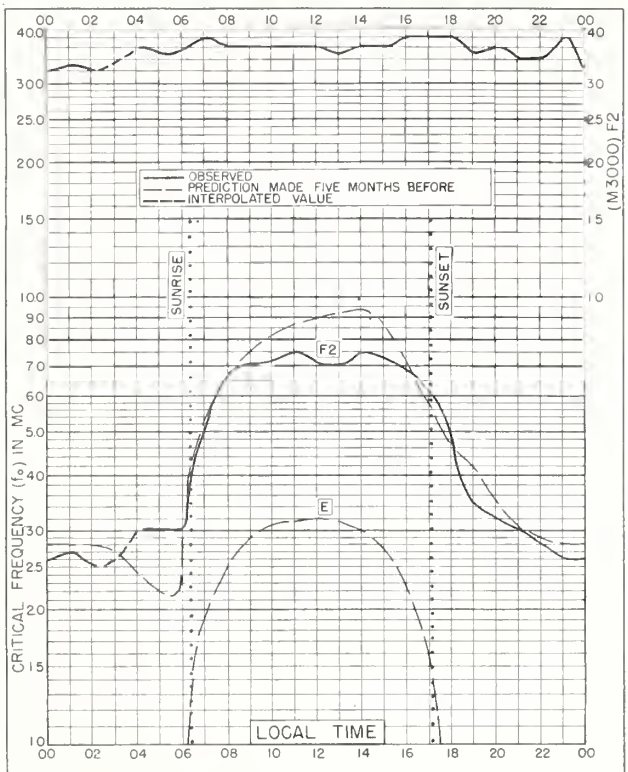


Fig. 77. DELHI, INDIA
28.6°N, 77.1°E NOVEMBER 1953

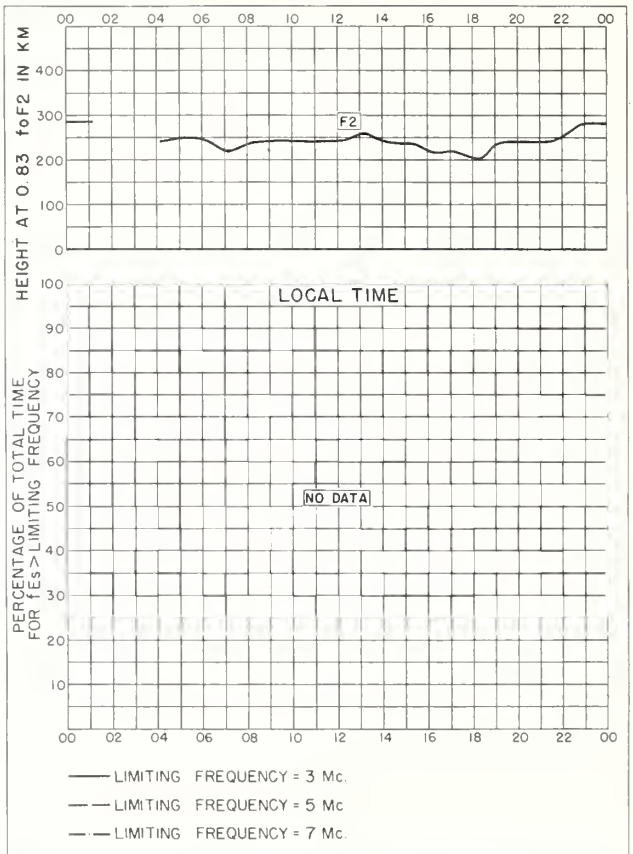


Fig. 78. DELHI, INDIA NOVEMBER 1953

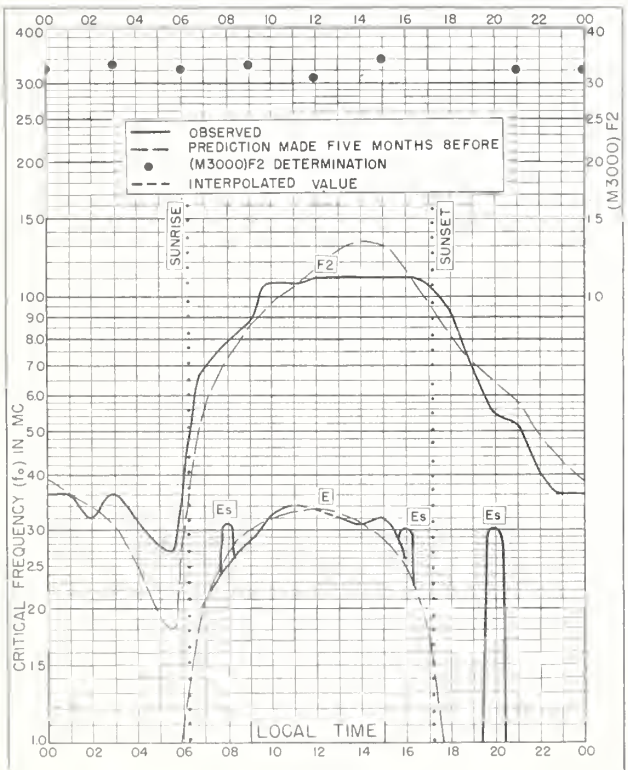


Fig. 79. CALCUTTA, INDIA
22.6°N, 88.4°E NOVEMBER 1953

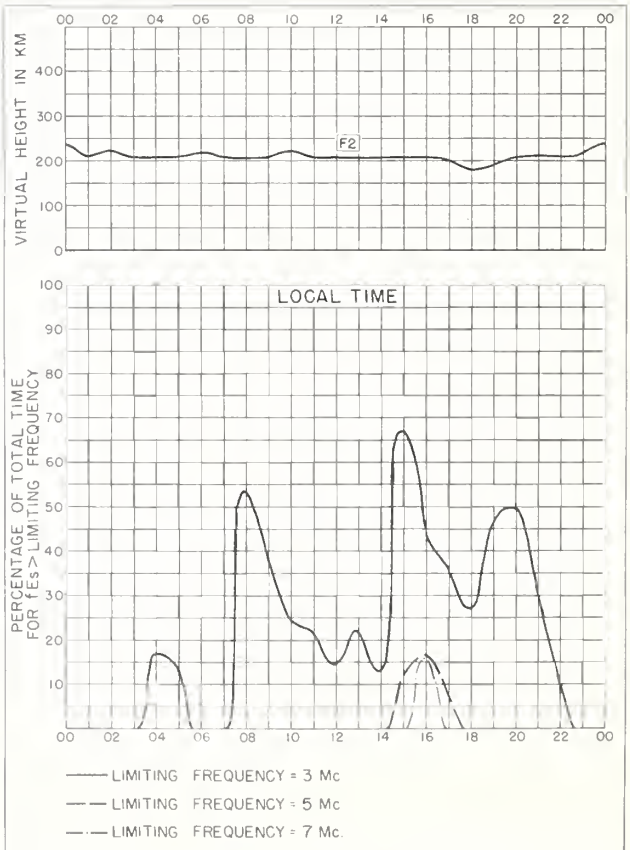


Fig. 80. CALCUTTA, INDIA NOVEMBER 1953

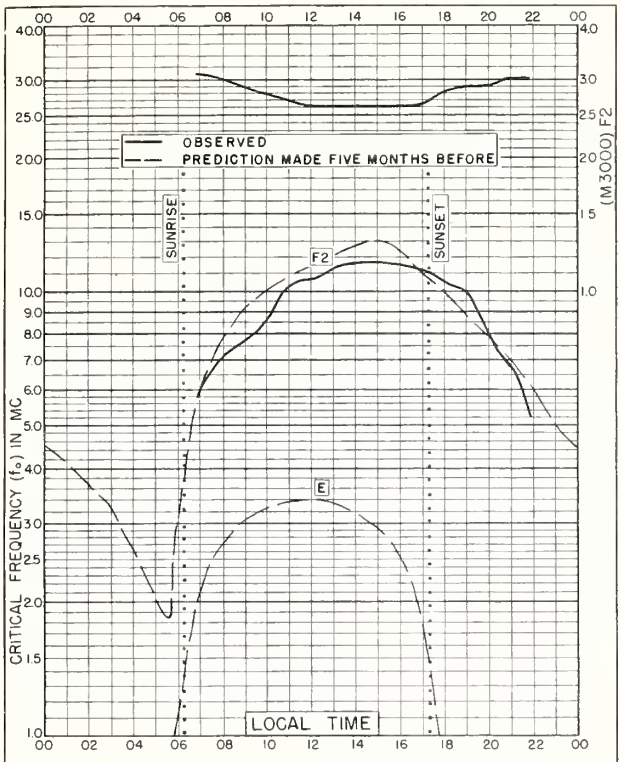


Fig. 81. BOMBAY, INDIA
19.0°N, 73.0°E NOVEMBER 1953

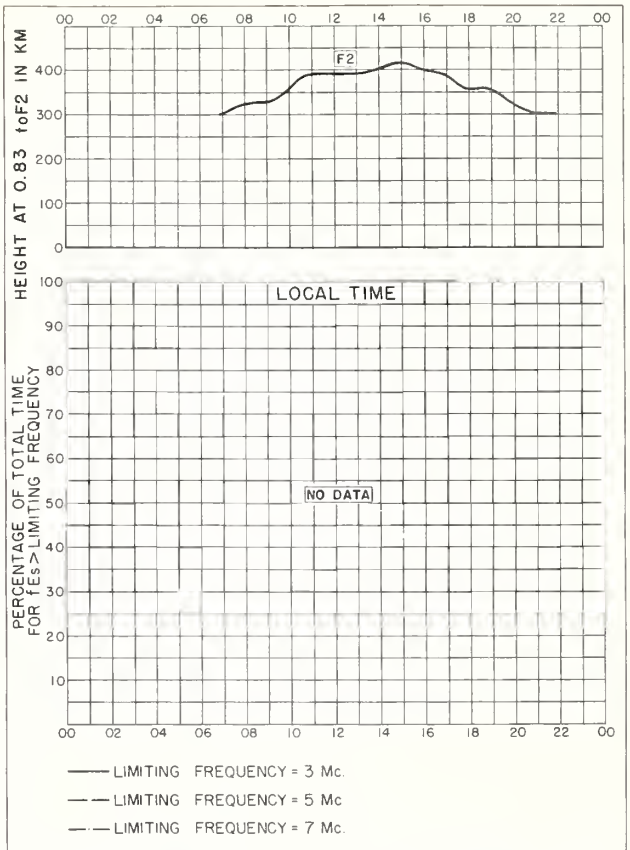


Fig. 82. BOMBAY, INDIA NOVEMBER 1953

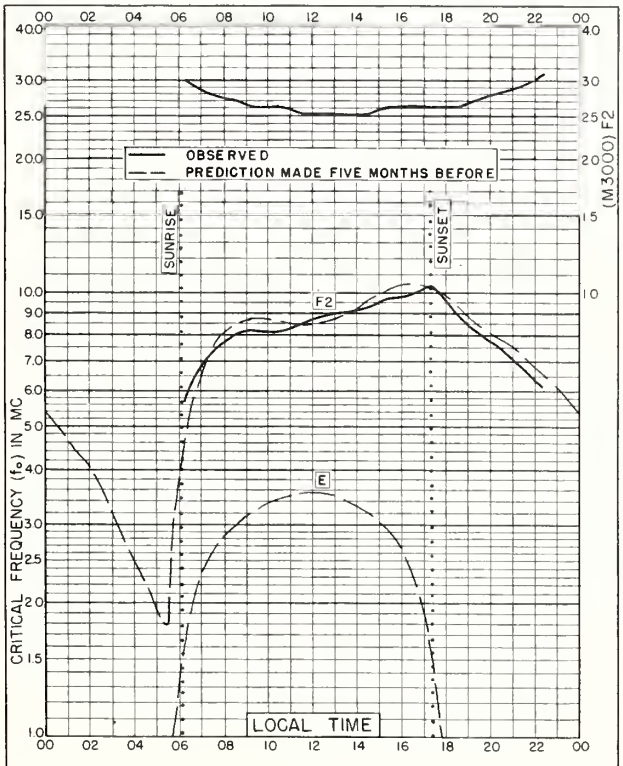


Fig. 83. MADRAS, INDIA
13.0°N, 80.2°E NOVEMBER 1953

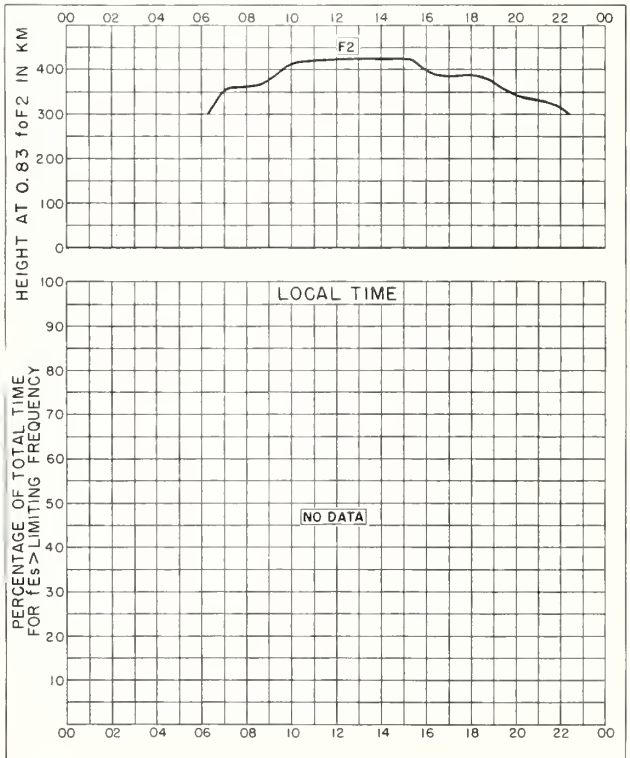


Fig. 84. MADRAS, INDIA NOVEMBER 1953

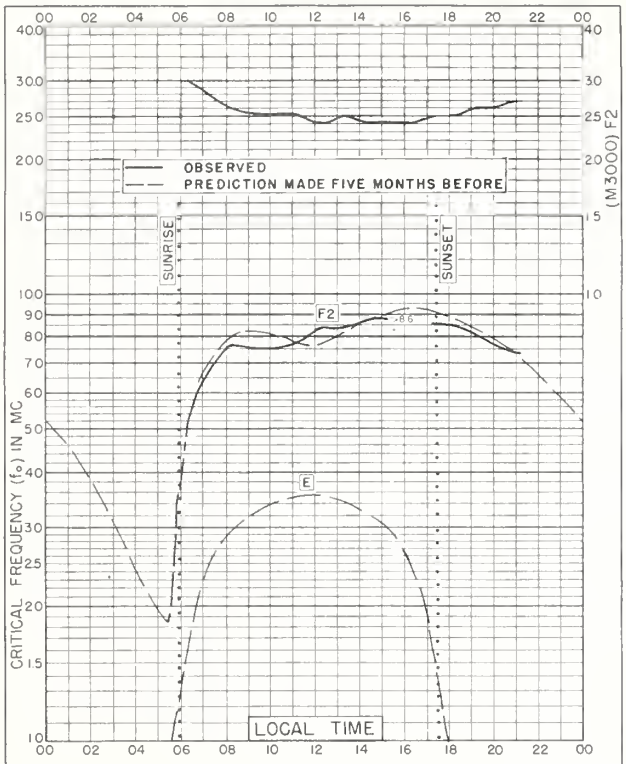


Fig. 85. TIRUCHY, INDIA
10.8°N, 78.8°E NOVEMBER 1953

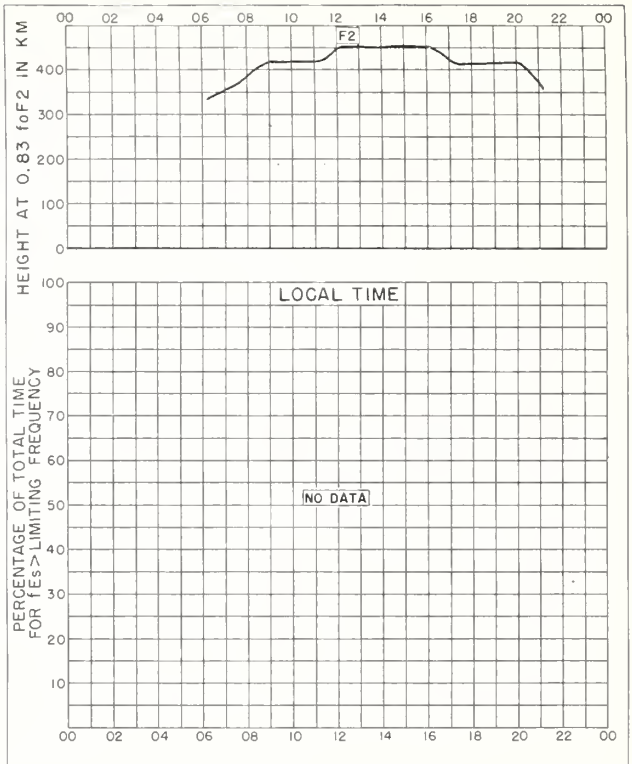


Fig. 86. TIRUCHY, INDIA NOVEMBER 1953

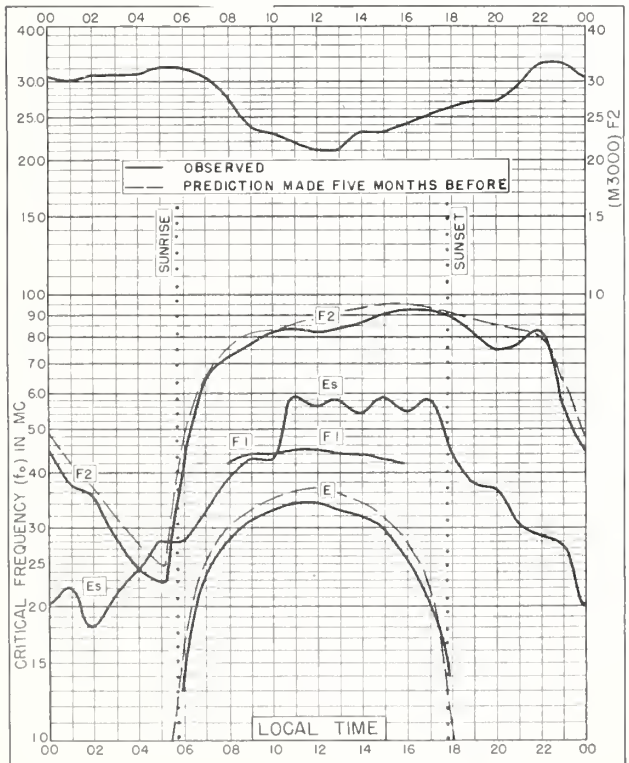


Fig. 87. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E NOVEMBER 1953

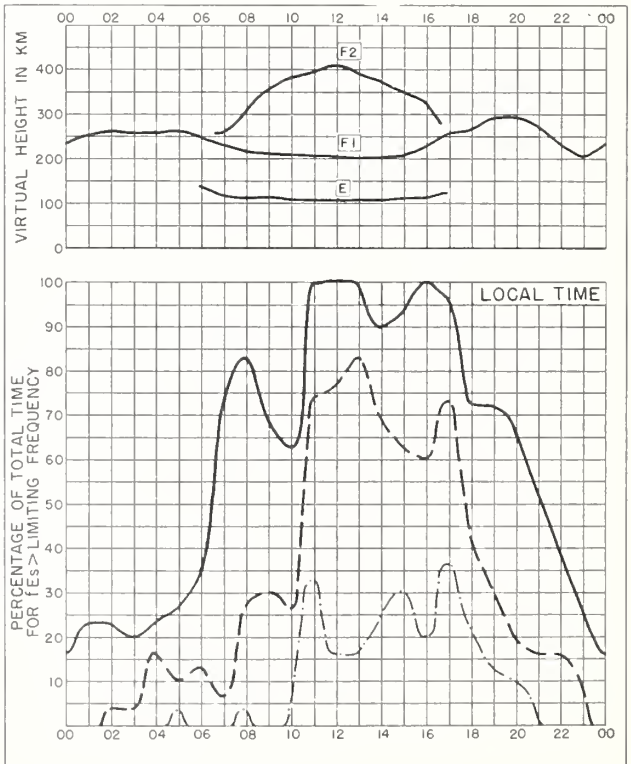


Fig. 88. SINGAPORE, BRITISH MALAYA NOVEMBER 1953

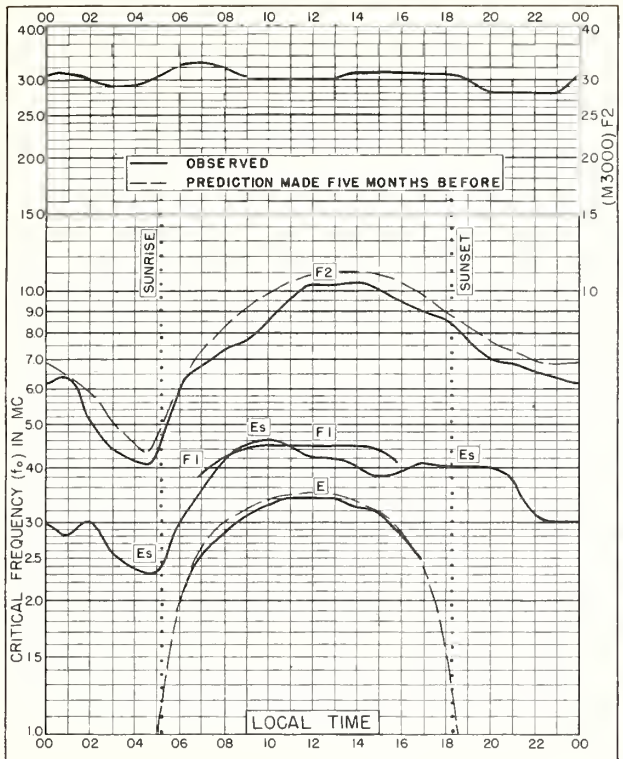


Fig. 89. RAROTONGA I.
21.3°S, 159.8° W NOVEMBER 1953

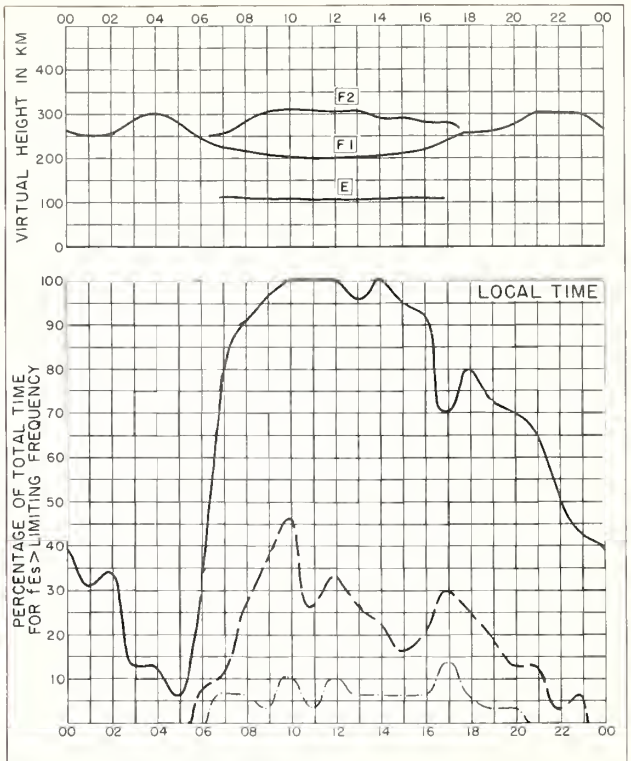


Fig. 90. RAROTONGA I. NOVEMBER 1953

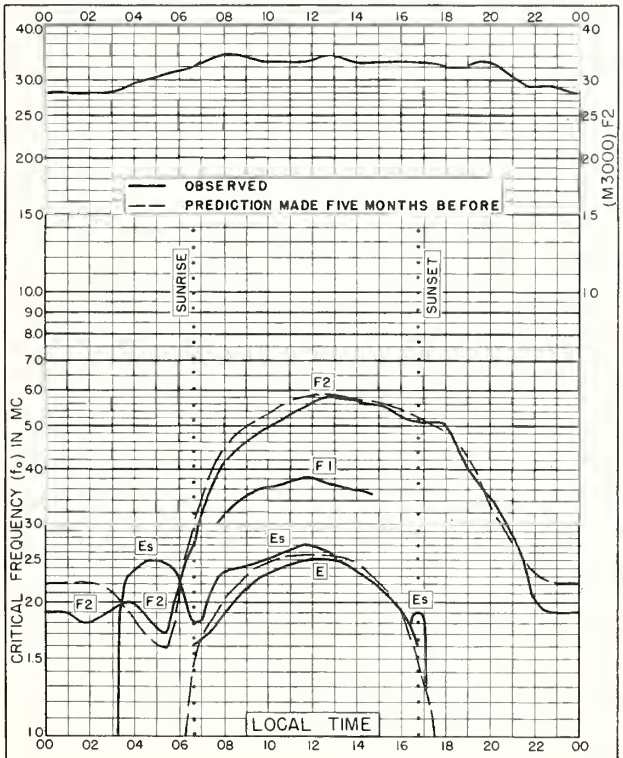


Fig. 91. INVERNESS, SCOTLAND
57.4°N, 4.2°W OCTOBER 1953

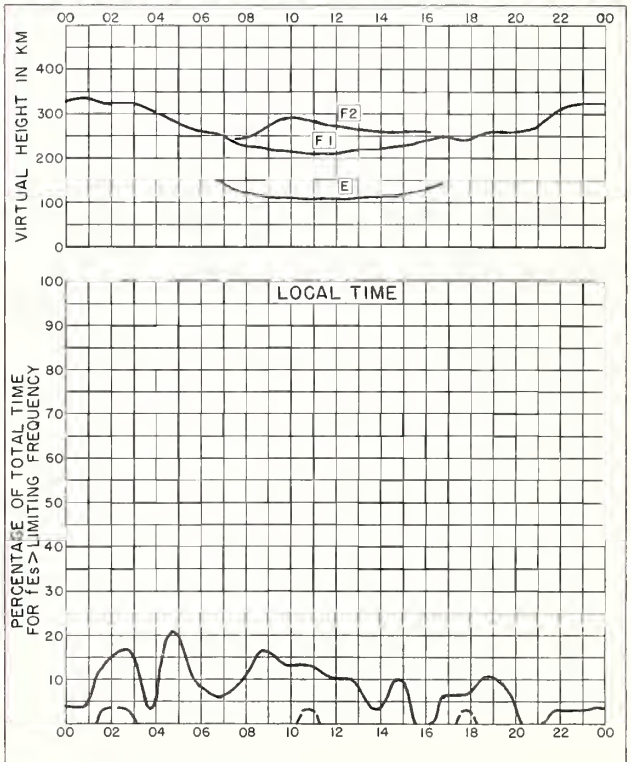


Fig. 92. INVERNESS, SCOTLAND OCTOBER 1953

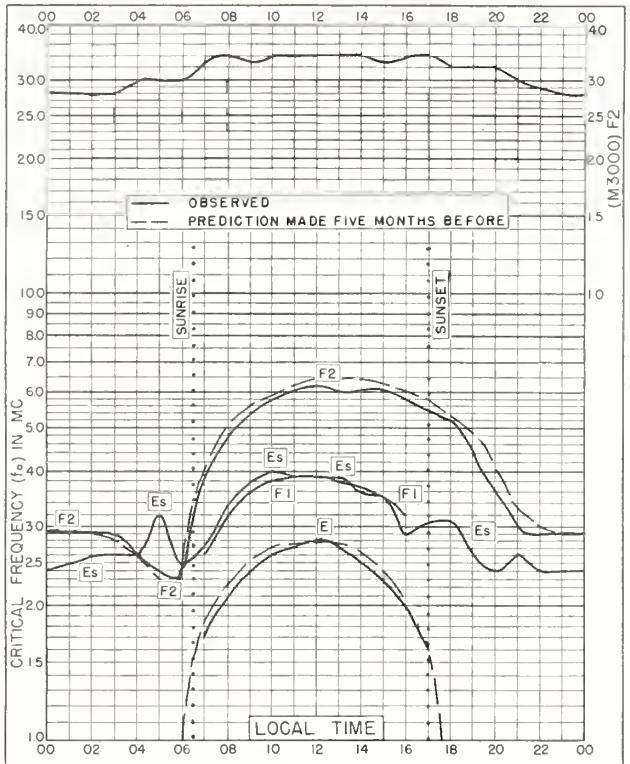


Fig. 93. SLOUGH, ENGLAND
51.5°N, 0.6°W OCTOBER 1953

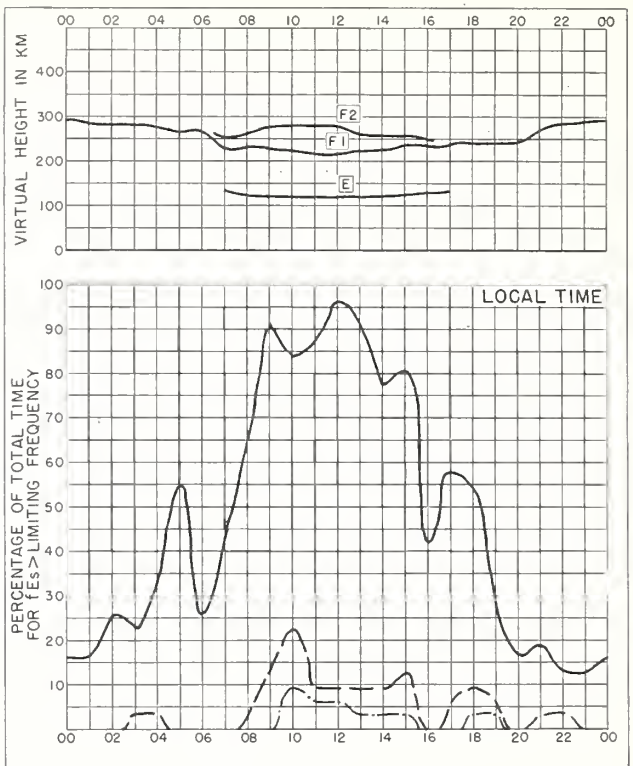


Fig. 94. SLOUGH, ENGLAND OCTOBER 1953

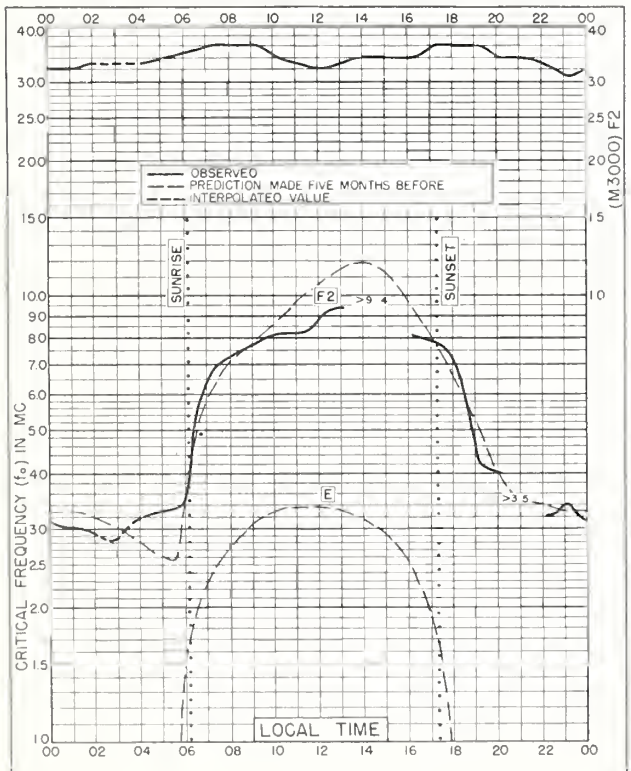


Fig. 95. DELHI, INDIA
28.6°N, 77.1°E OCTOBER 1953

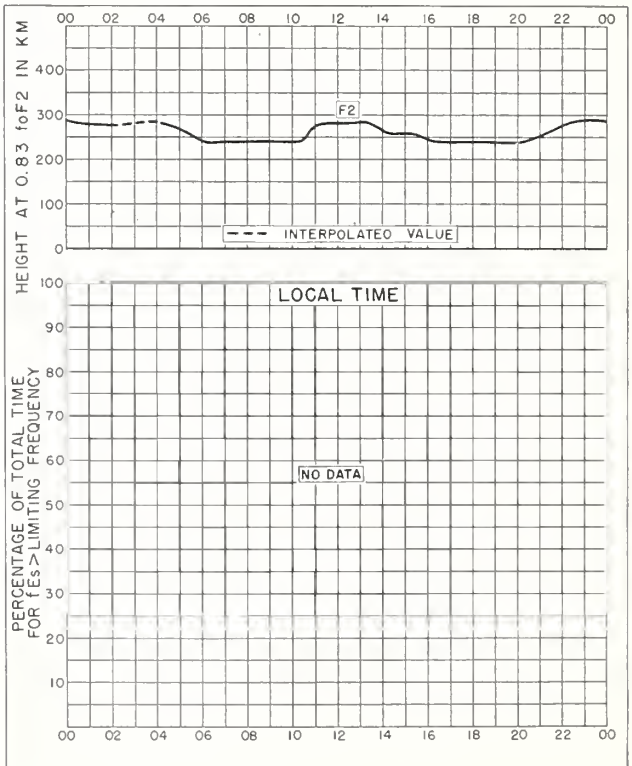


Fig. 96. DELHI, INDIA OCTOBER 1953

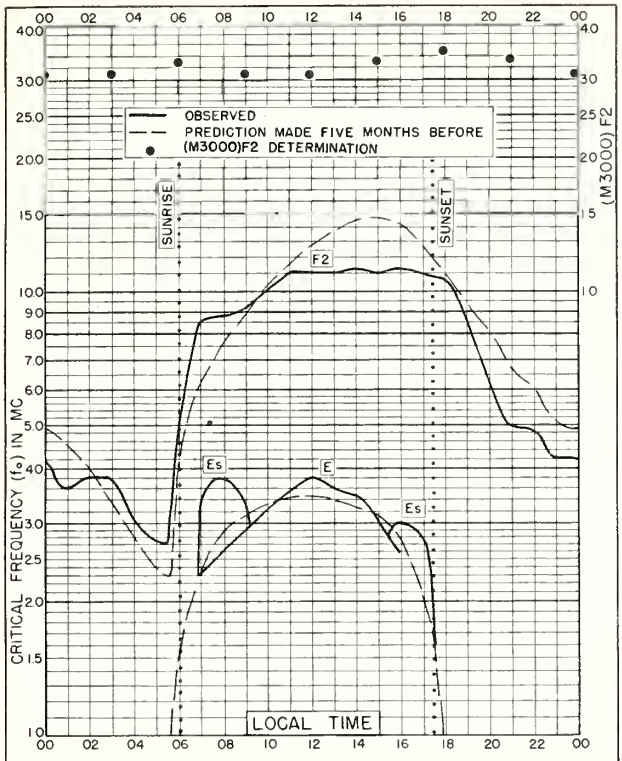


Fig. 97. CALCUTTA, INDIA
22.6°N, 88.4°E OCTOBER 1953

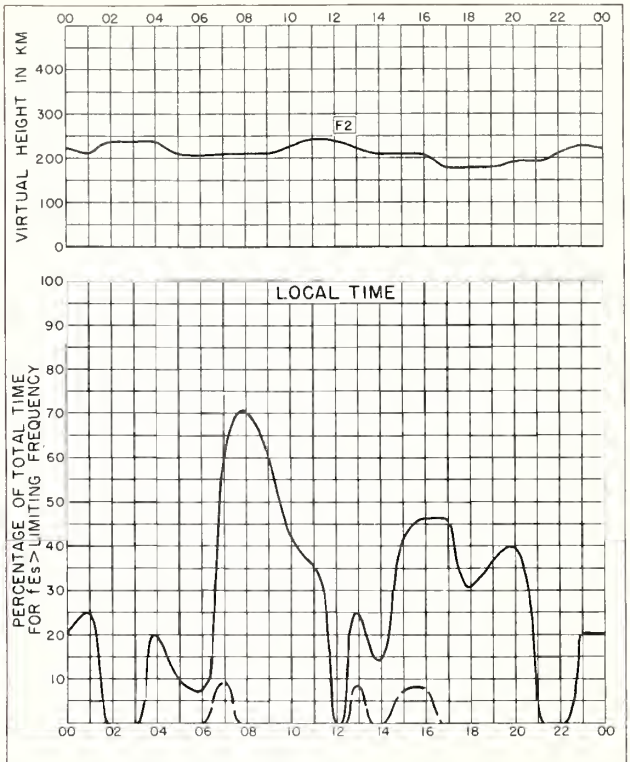


Fig. 98. CALCUTTA, INDIA OCTOBER 1953

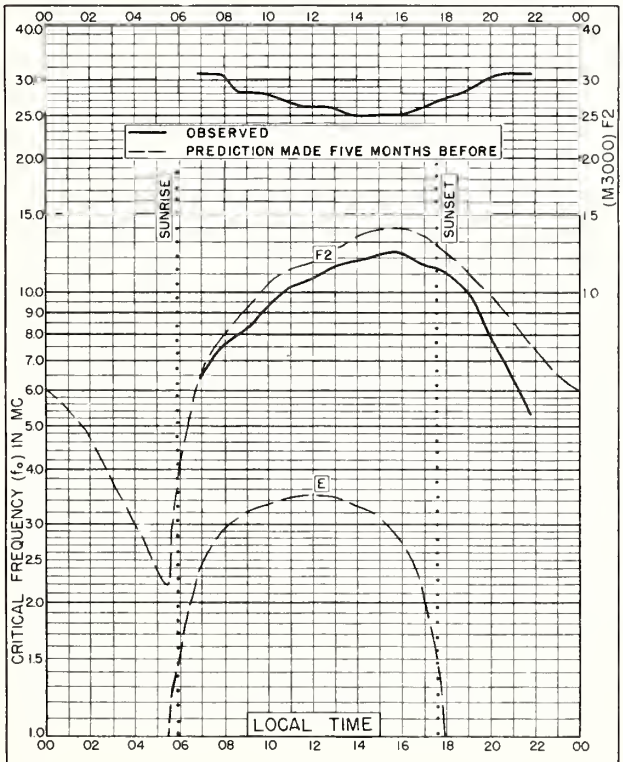


Fig. 99. BOMBAY, INDIA
19.0°N, 73.0°E OCTOBER 1953

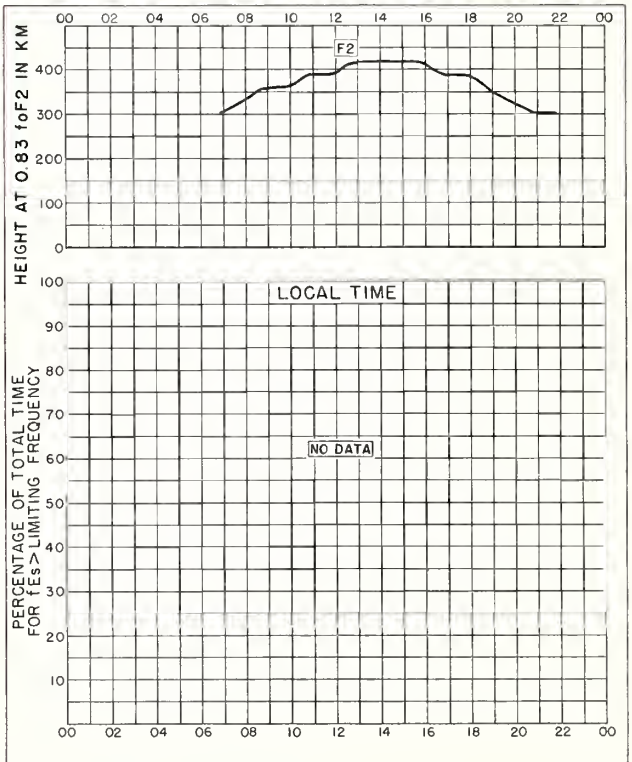


Fig. 100. BOMBAY, INDIA OCTOBER 1953

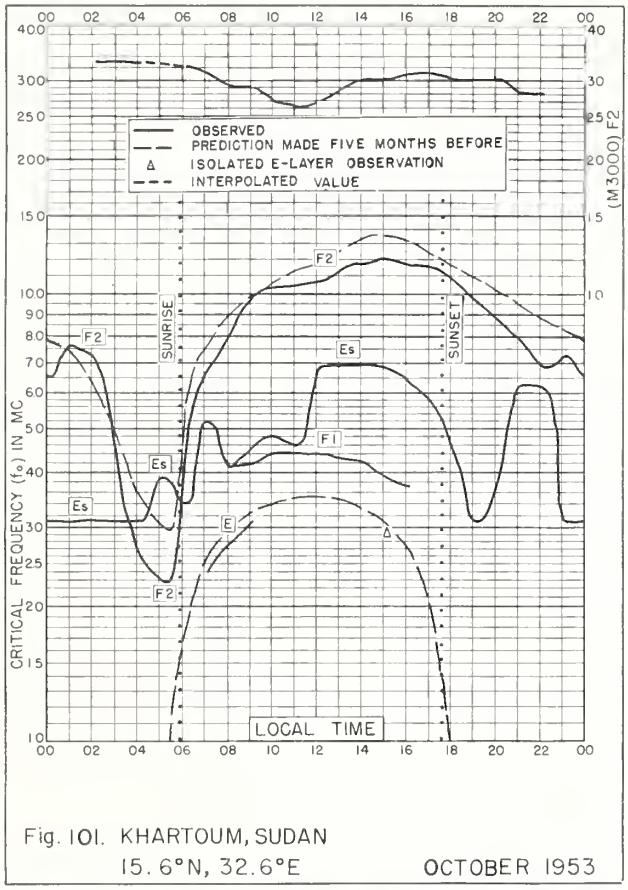


Fig. 101. KHARTOUM, SUDAN
15.6°N, 32.6°E OCTOBER 1953

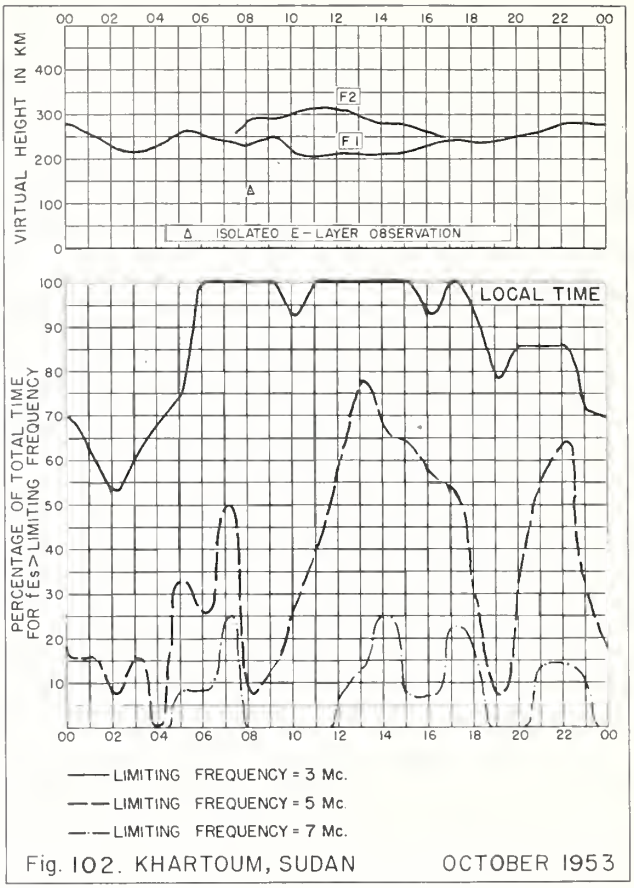


Fig. 102. KHARTOUM, SUDAN OCTOBER 1953

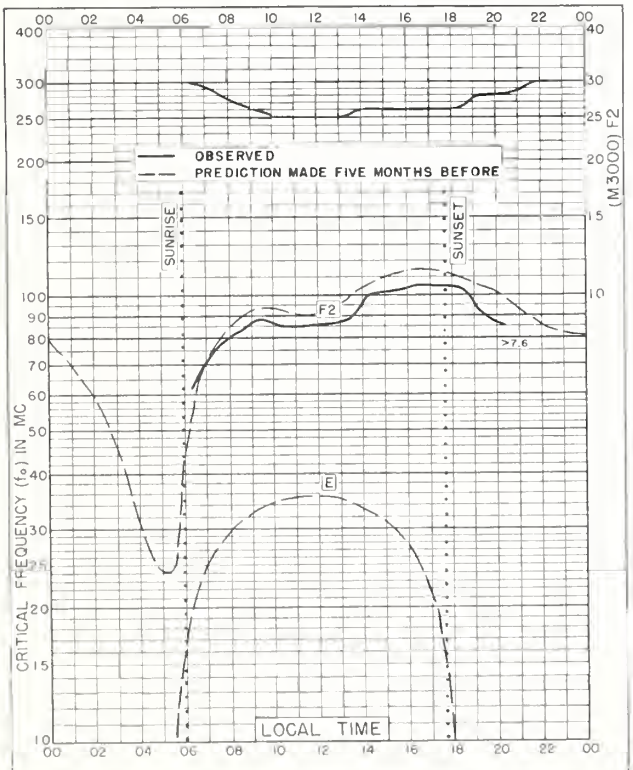


Fig. 103. MADRAS, INDIA
13.0°N, 80.2°E OCTOBER 1953

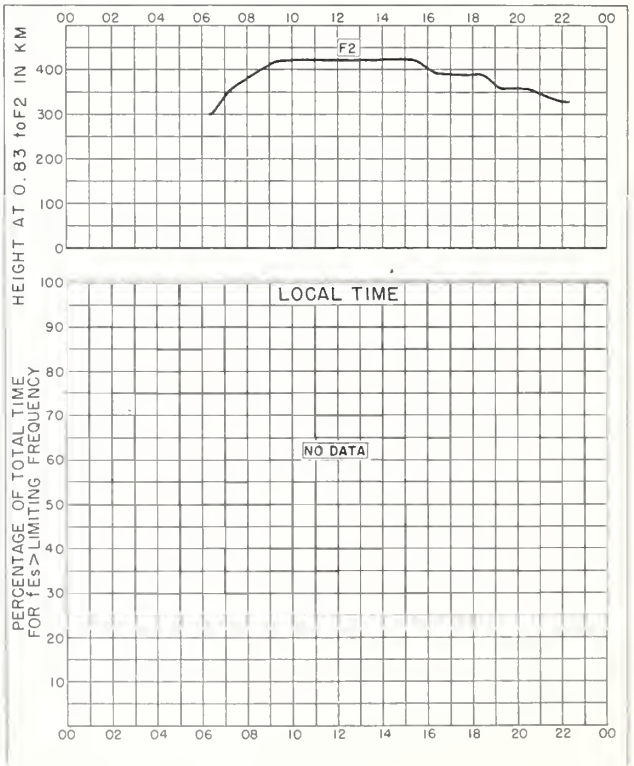


Fig. 104. MADRAS, INDIA OCTOBER 1953

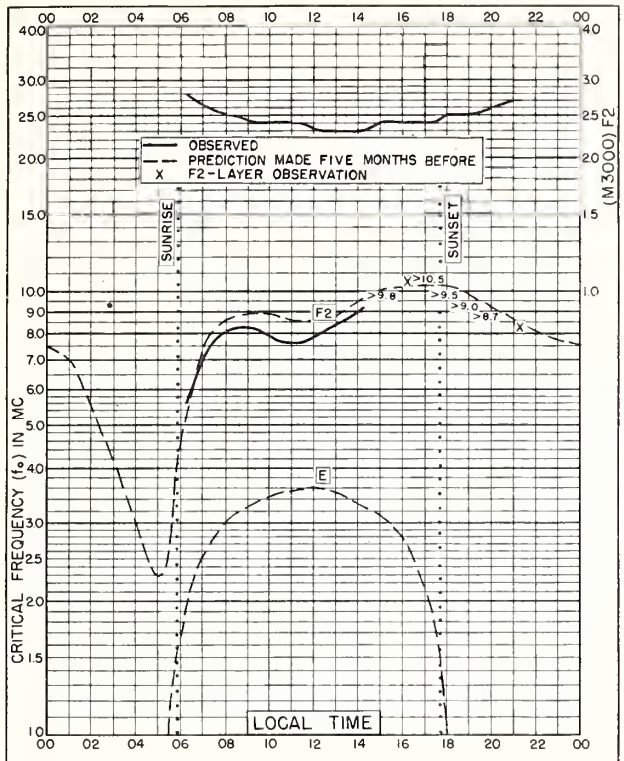


Fig. 105. TIRUCHY, INDIA
10.8°N, 78.8°E OCTOBER 1953

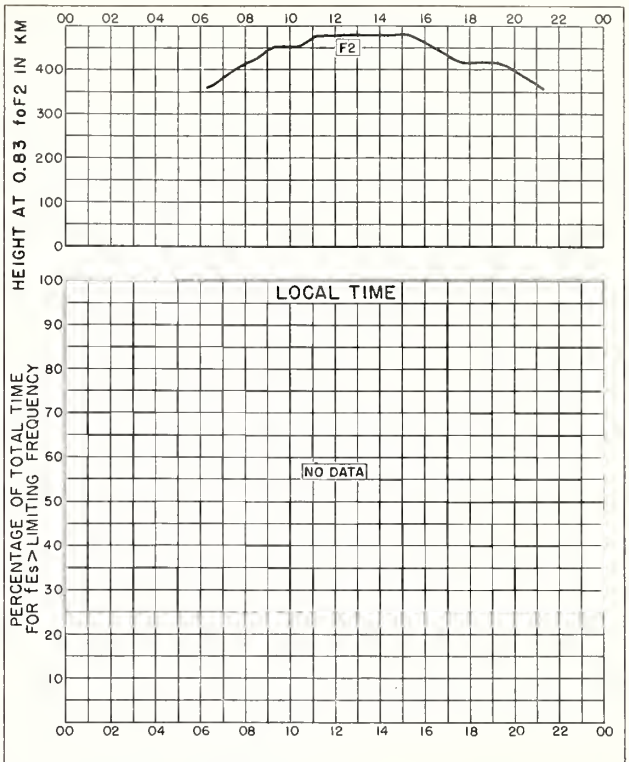


Fig. 106. TIRUCHY, INDIA OCTOBER 1953

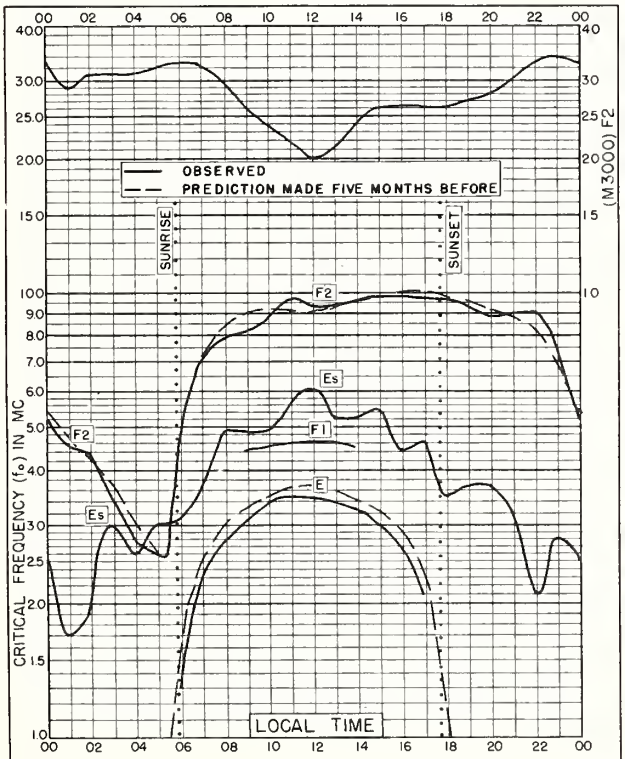


Fig. 107. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E OCTOBER 1953

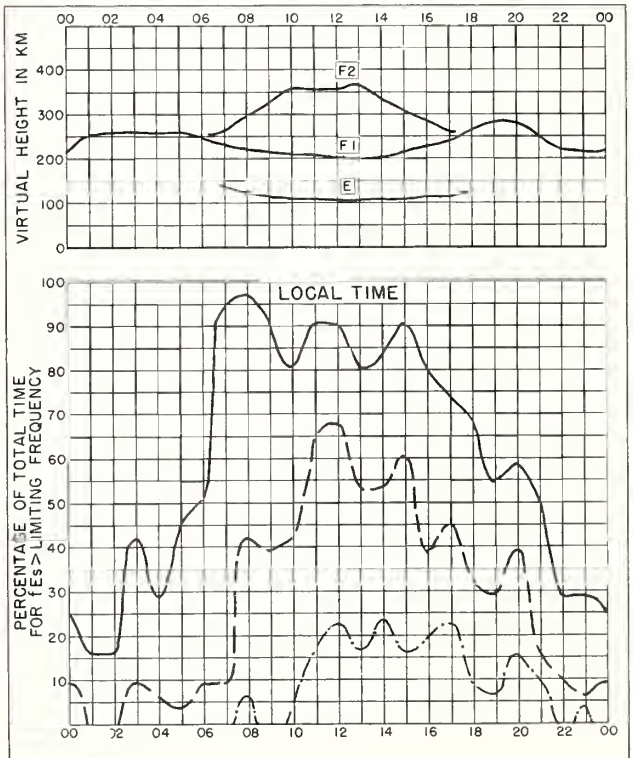


Fig. 108. SINGAPORE, BRITISH MALAYA OCTOBER 1953

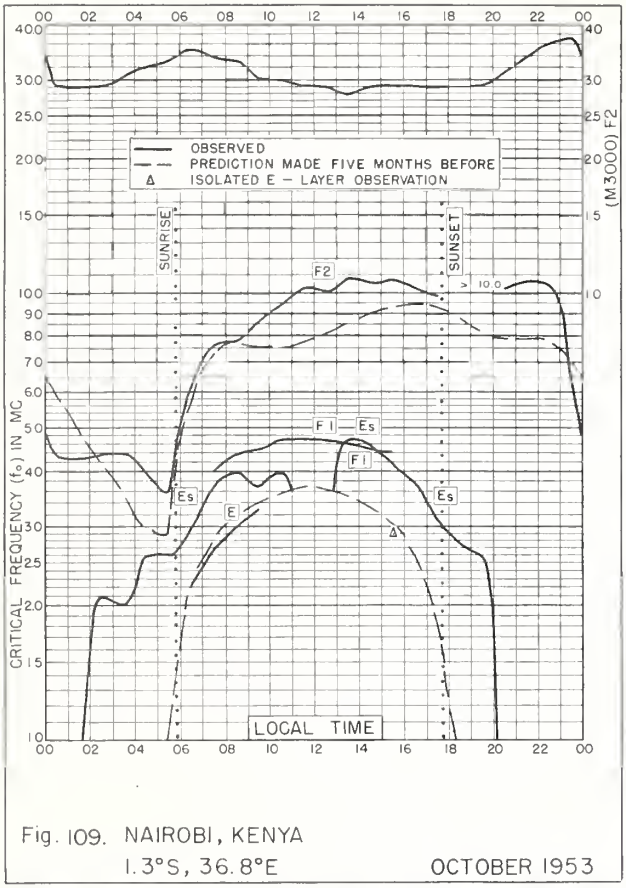


Fig. 109. NAIROBI, KENYA
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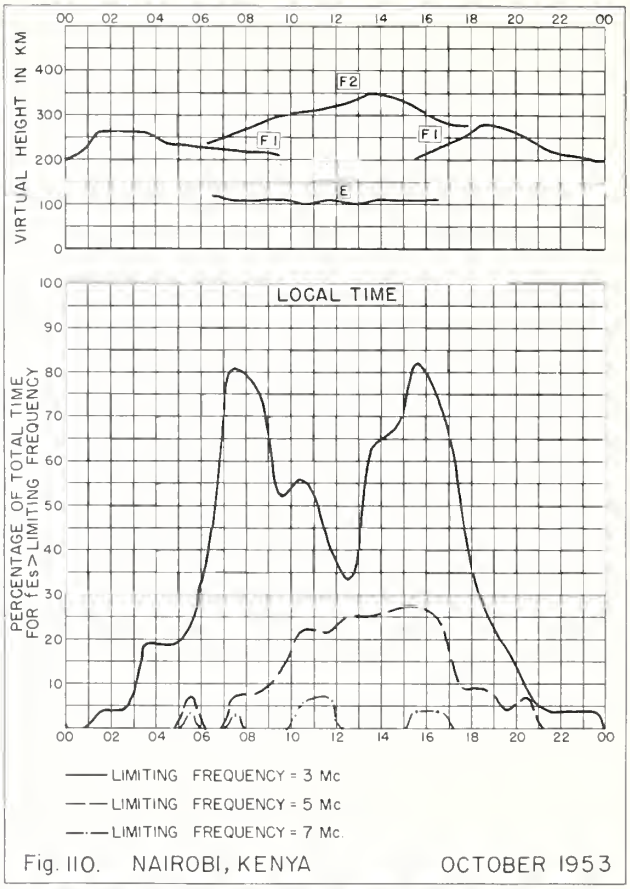

Fig. 110. NAIROBI, KENYA OCTOBER 1953

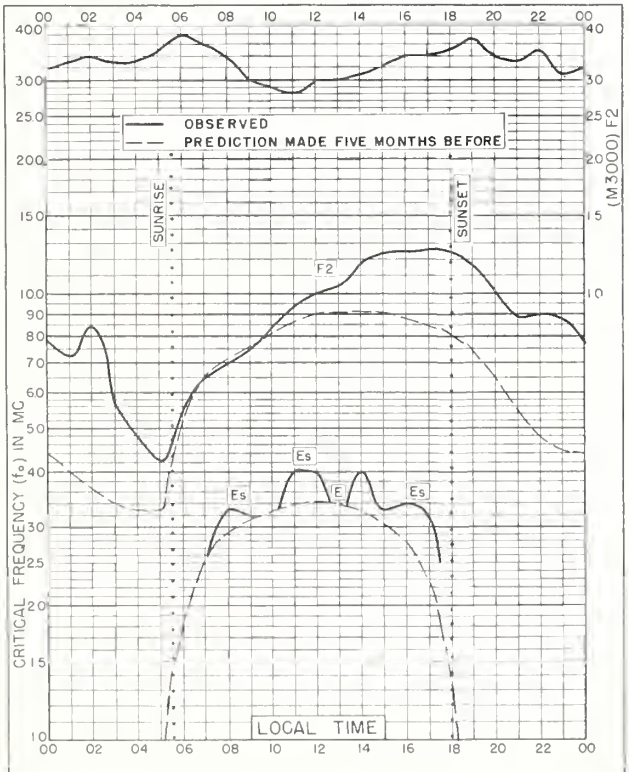

Fig. 111. SAO PAULO, BRAZIL
23.5°S, 46.5°W OCTOBER 1953

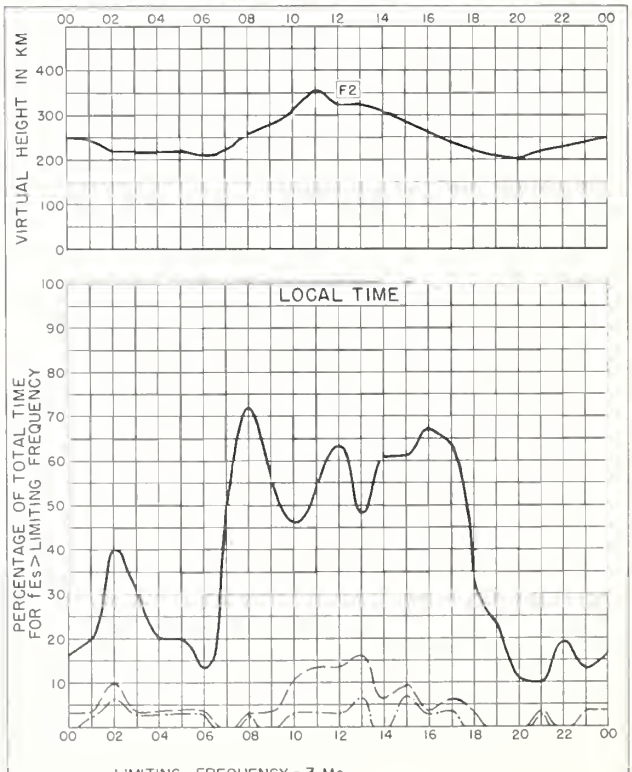

Fig. 112. SAO PAULO, BRAZIL OCTOBER 1953

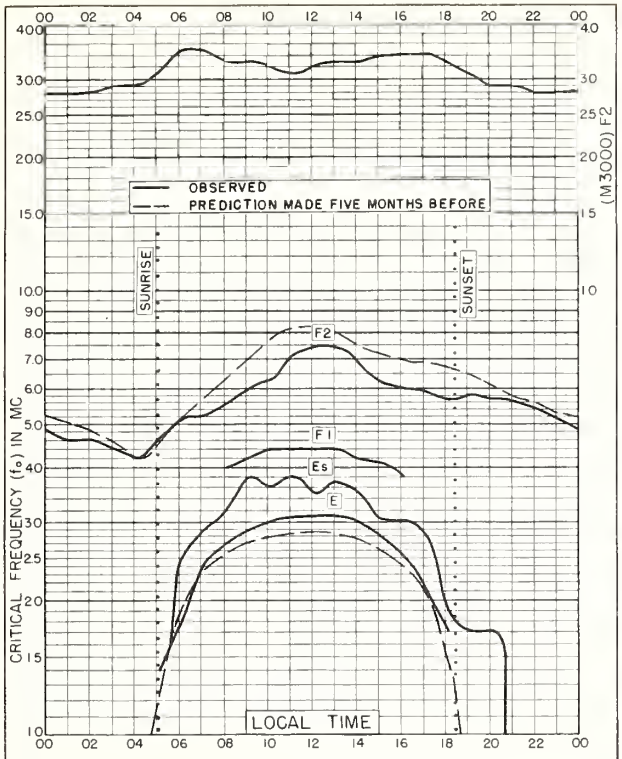

Fig. 113. FALKLAND IS.
51.7° S, 57.8° W OCTOBER 1953

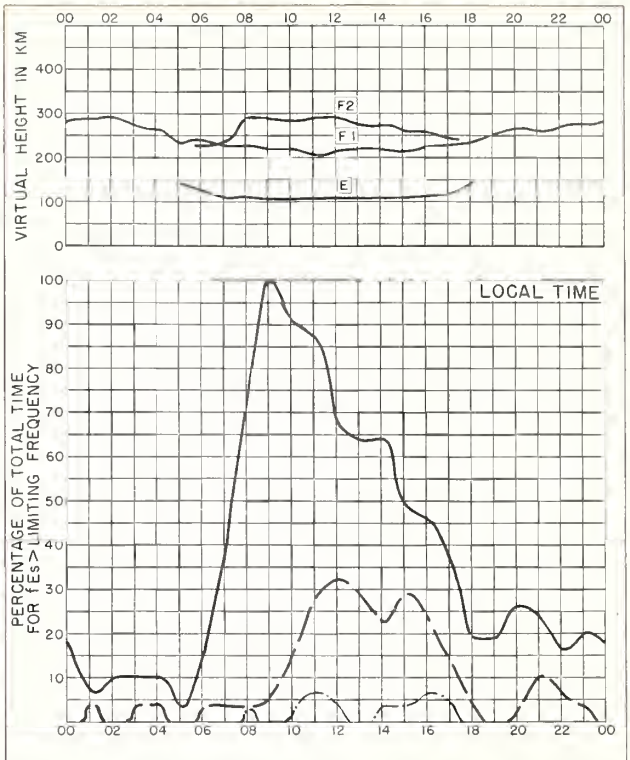

Fig. 114. FALKLAND IS. OCTOBER 1953

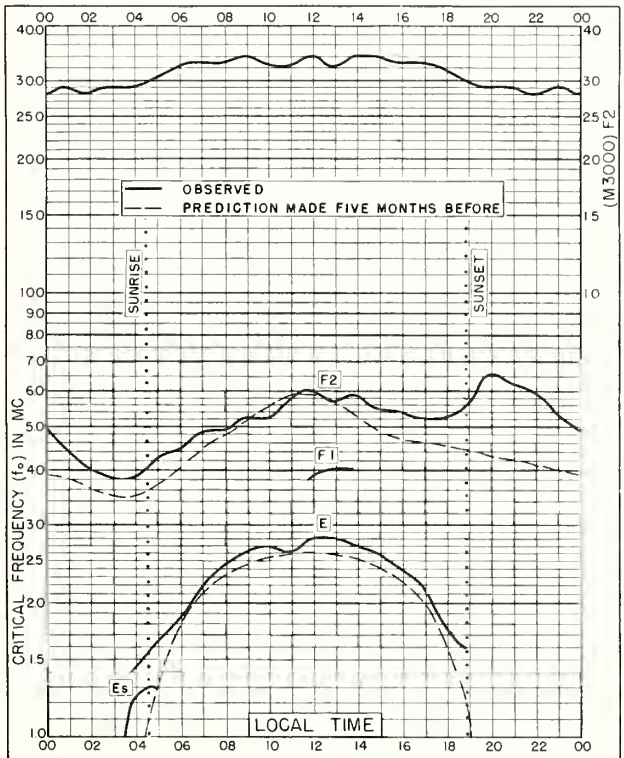

Fig. 115. PORT LOCKROY
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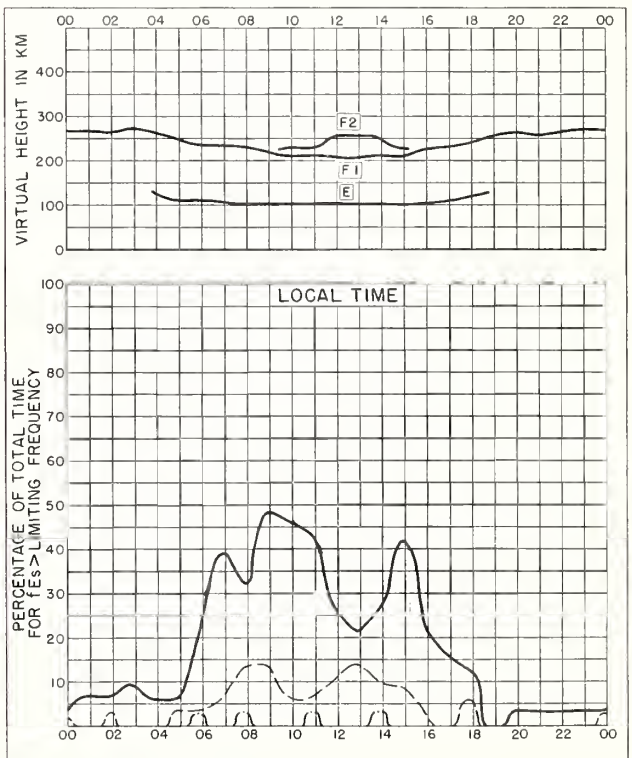

Fig. 116. PORT LOCKROY OCTOBER 1953

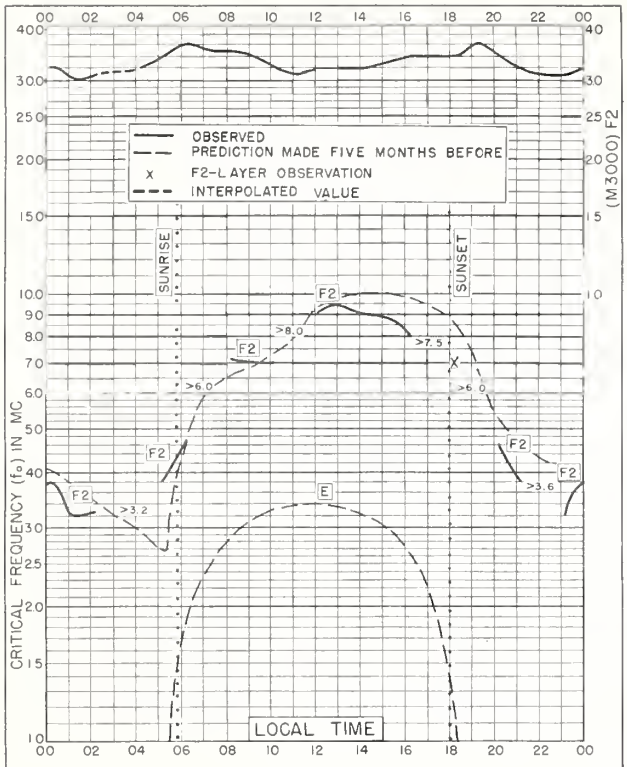

Fig. 117. DELHI, INDIA
28.6°N, 77.1°E SEPTEMBER 1953

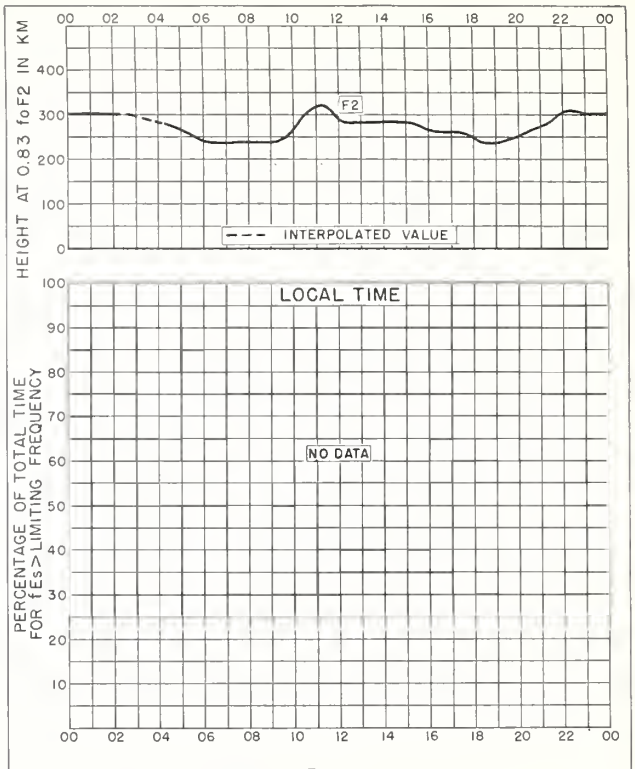

Fig. 118. DELHI, INDIA SEPTEMBER 1953

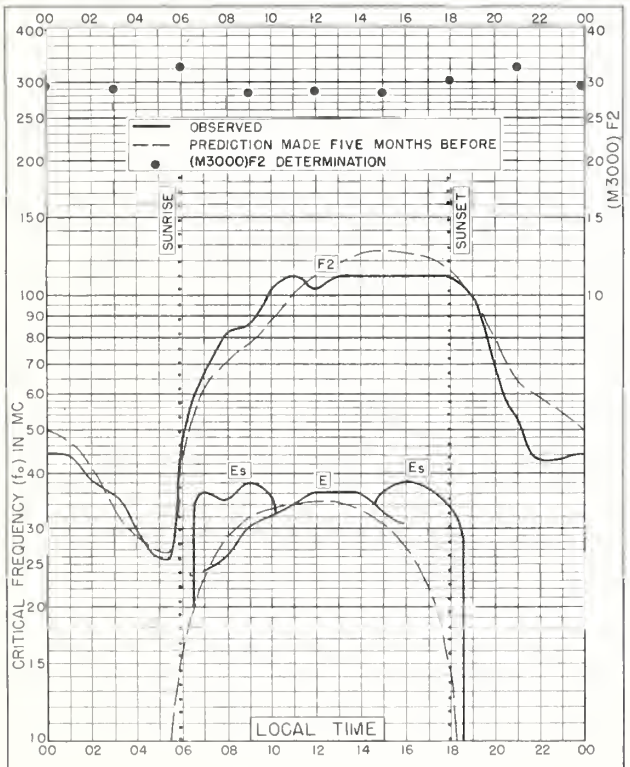

Fig. 119. CALCUTTA, INDIA
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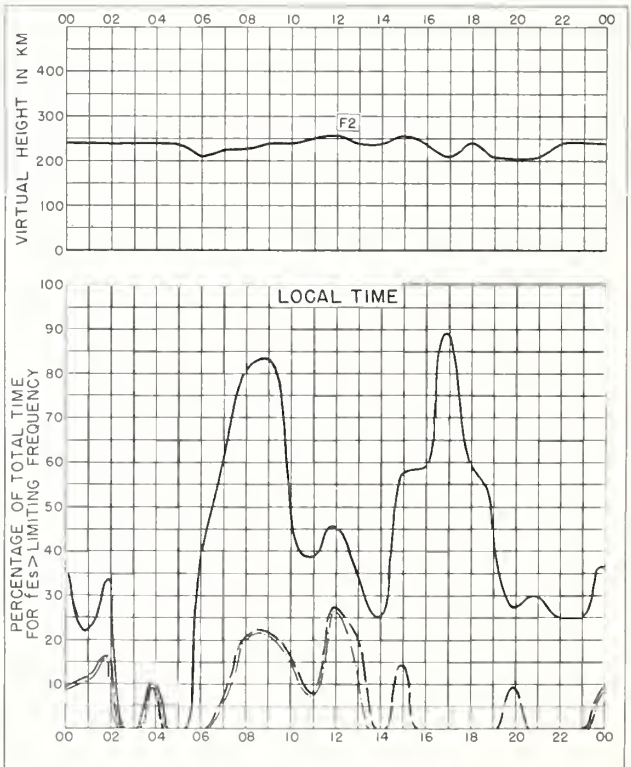

Fig. 120. CALCUTTA, INDIA SEPTEMBER 1953

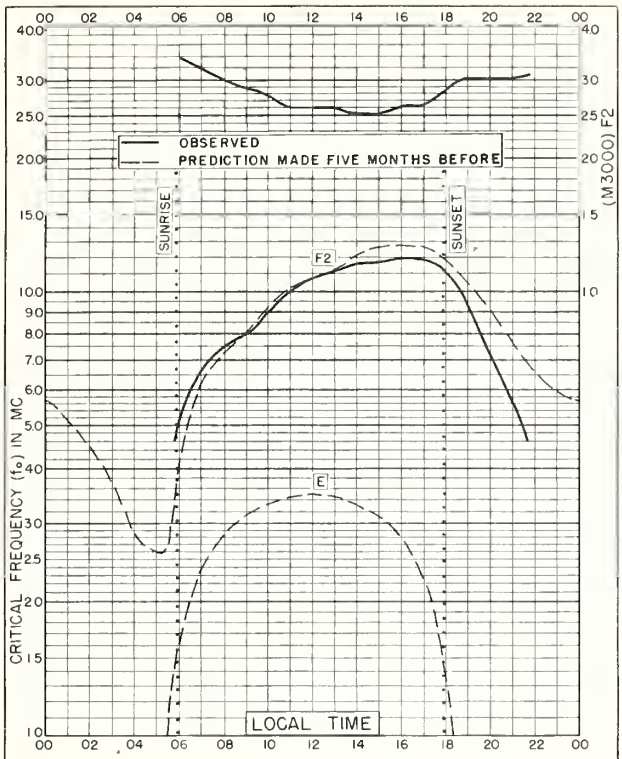

Fig. 121. BOMBAY, INDIA
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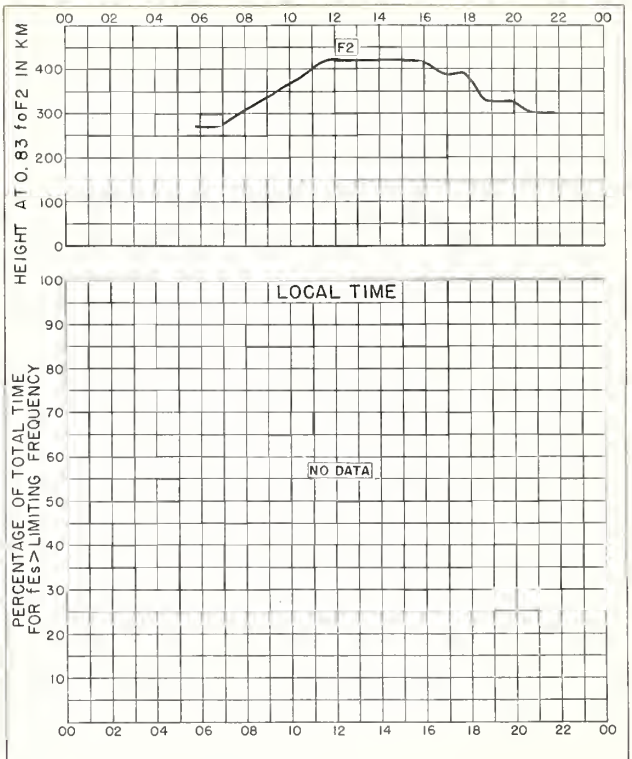

Fig. 122. BOMBAY, INDIA SEPTEMBER 1953

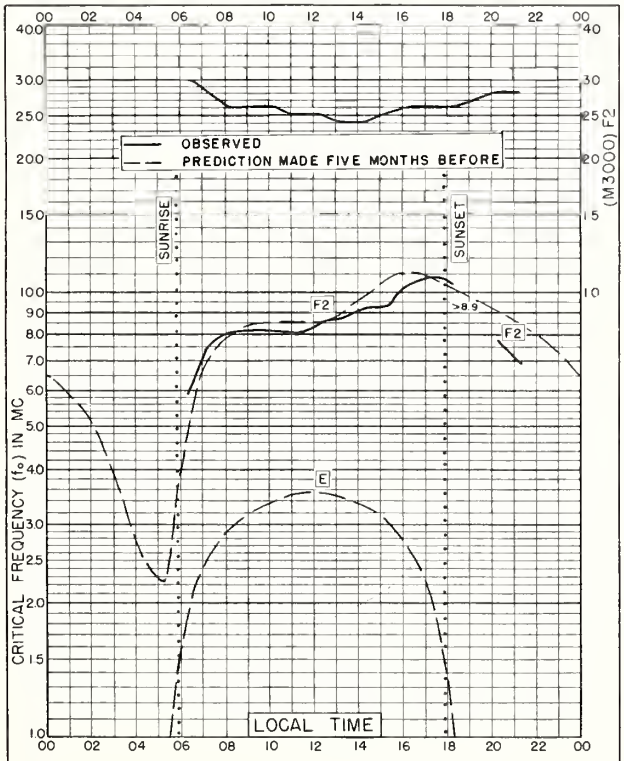

Fig. 123. MADRAS, INDIA
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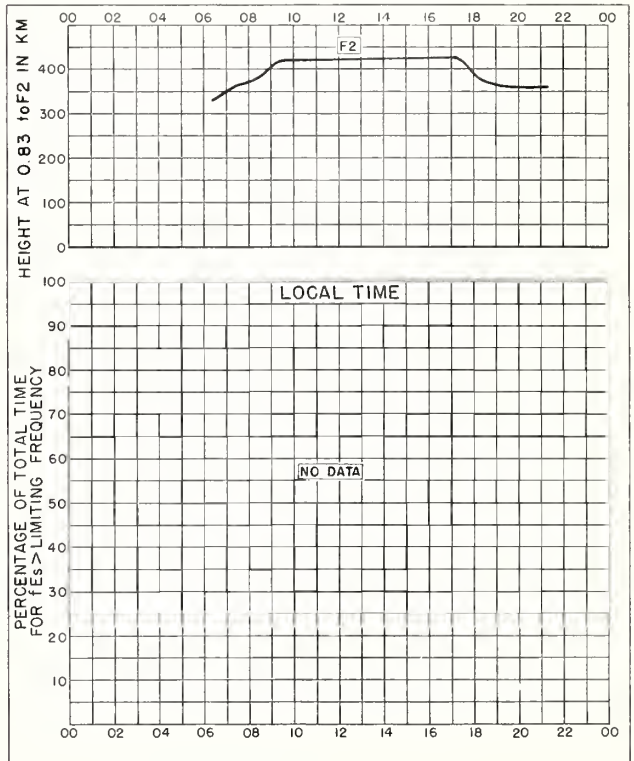

Fig. 124. MADRAS, INDIA SEPTEMBER 1953

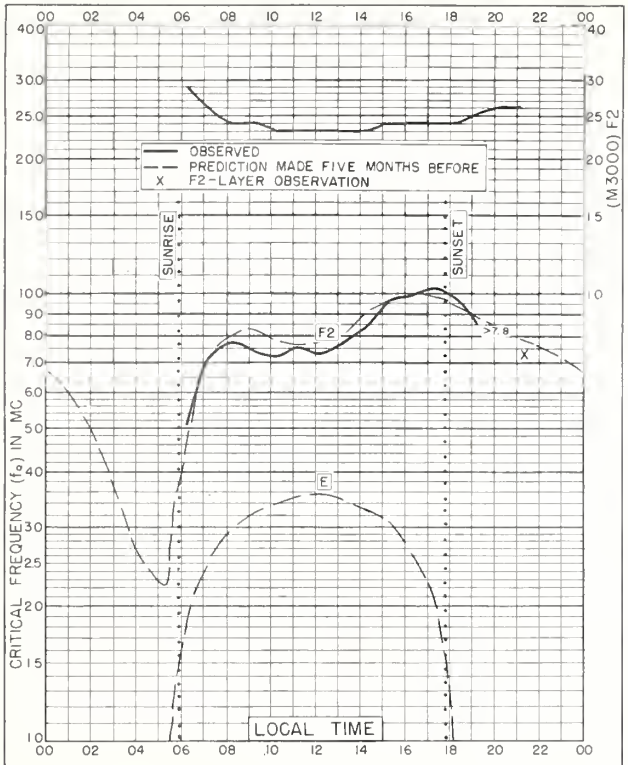

Fig. 125. TIRUCHY, INDIA
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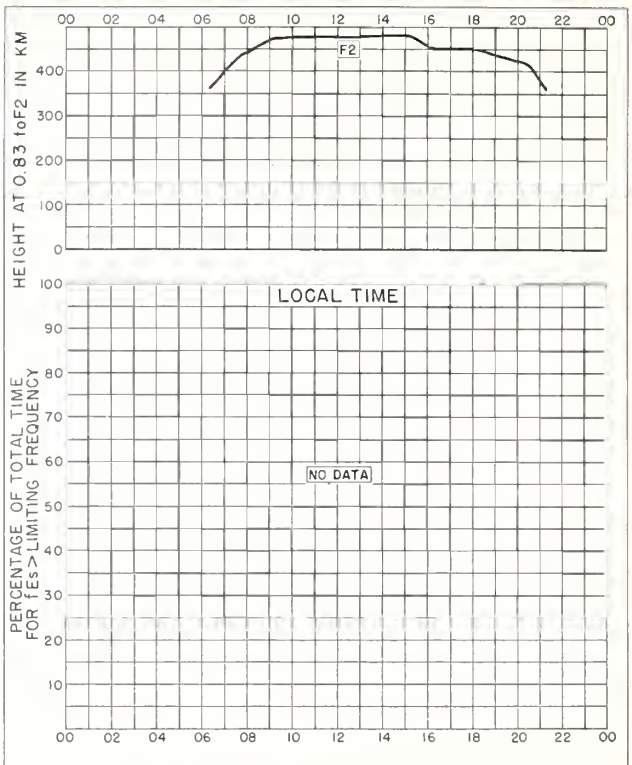

Fig. 126. TIRUCHY, INDIA SEPTEMBER 1953

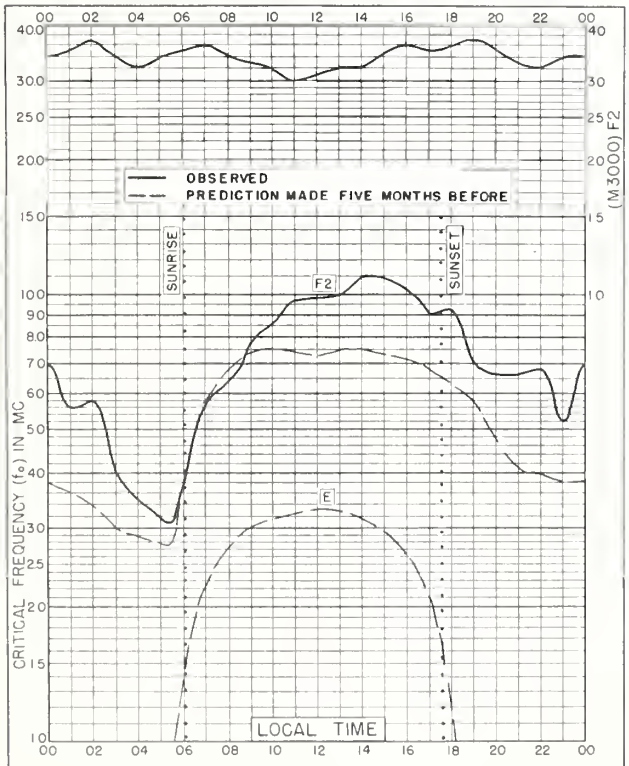

Fig. 127. SAO PAULO, BRAZIL
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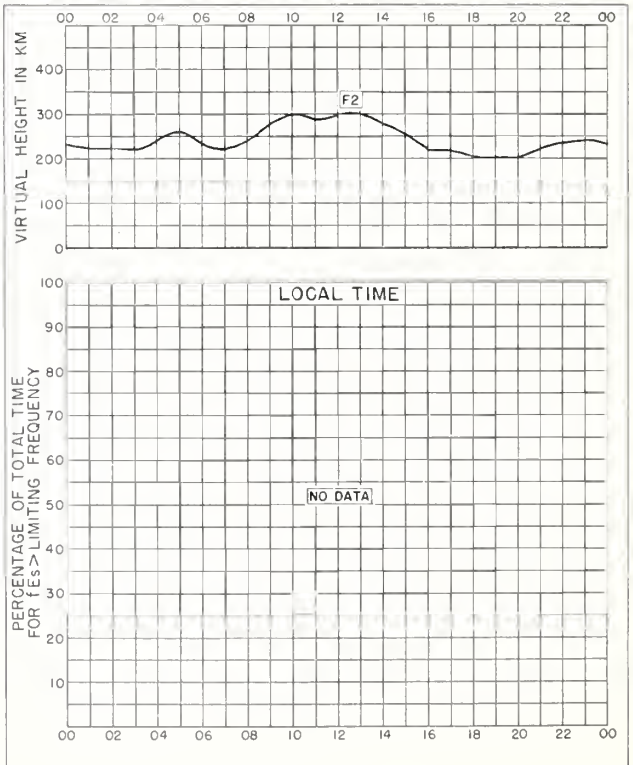

Fig. 128. SAO PAULO, BRAZIL SEPTEMBER 1953

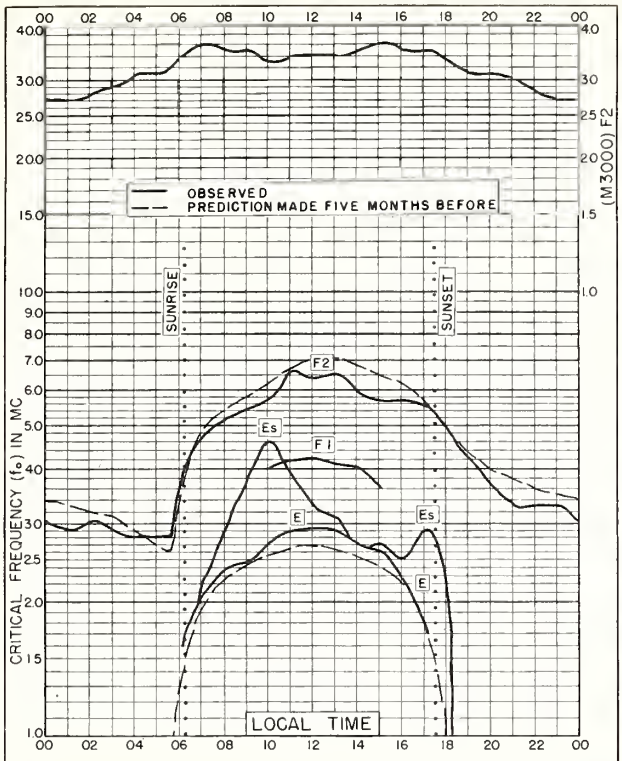

Fig. 129. FALKLAND IS.
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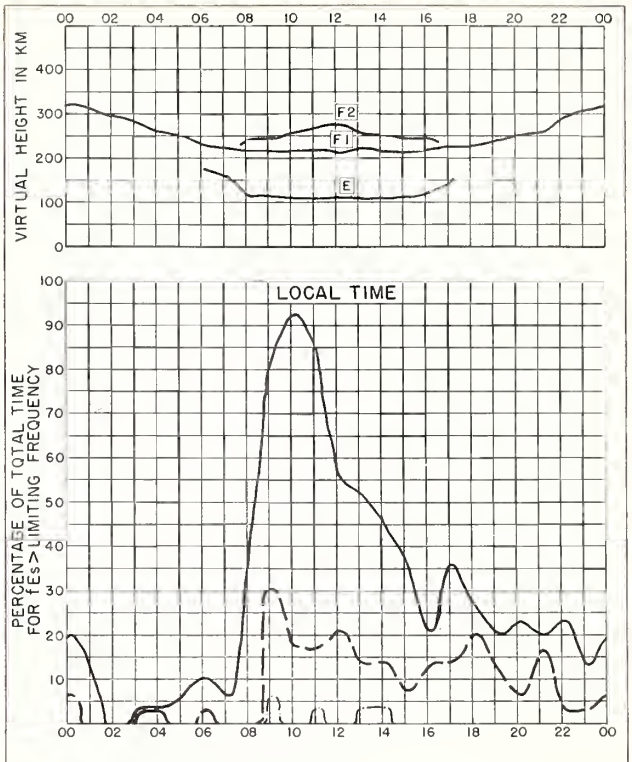

Fig. 130. FALKLAND IS. SEPTEMBER 1953

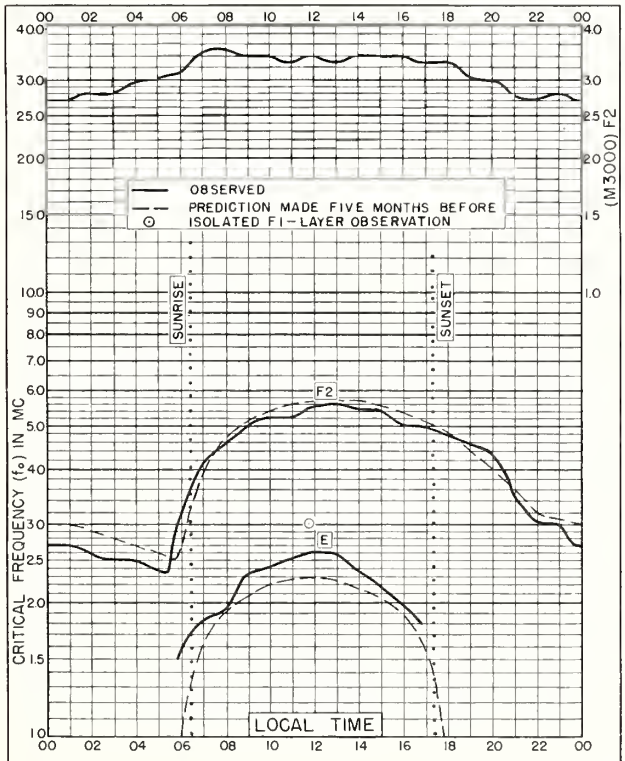

Fig. 131. PORT LOCKROY
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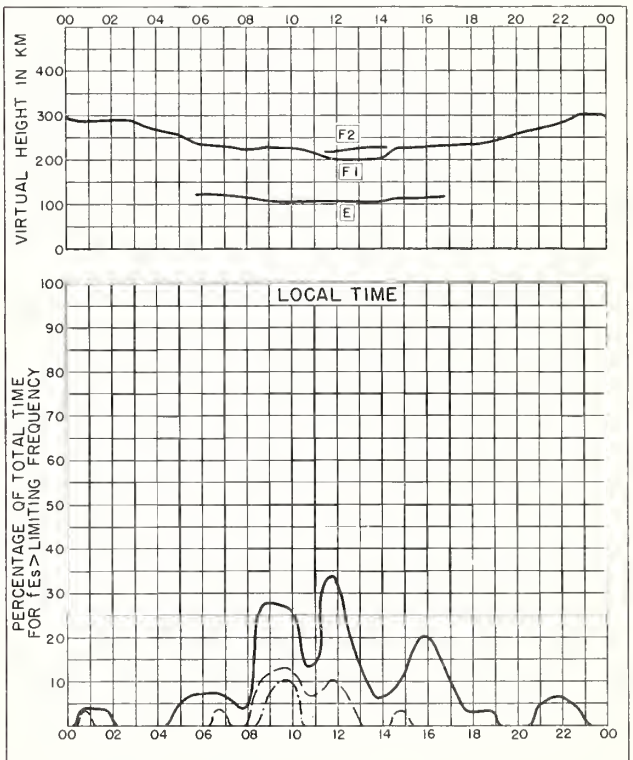

Fig. 132. PORT LOCKROY SEPTEMBER 1953

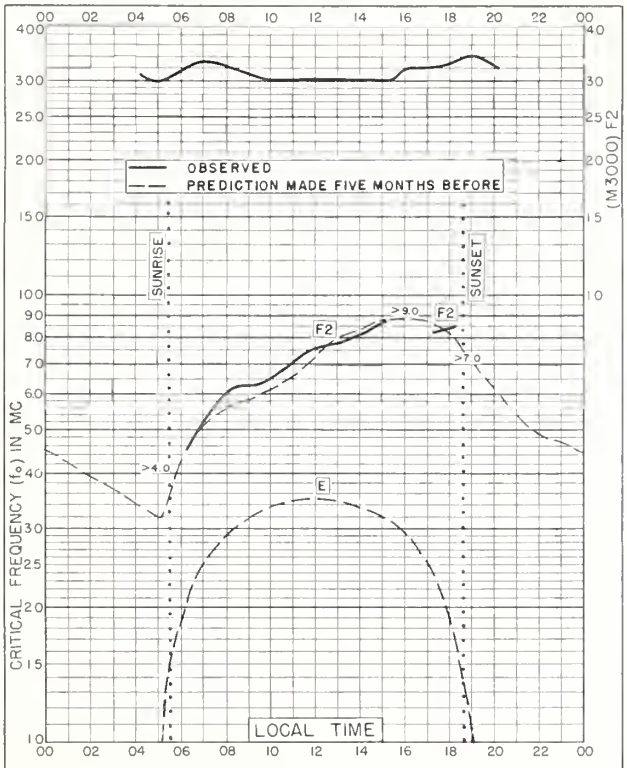

Fig. 133. DELHI, INDIA
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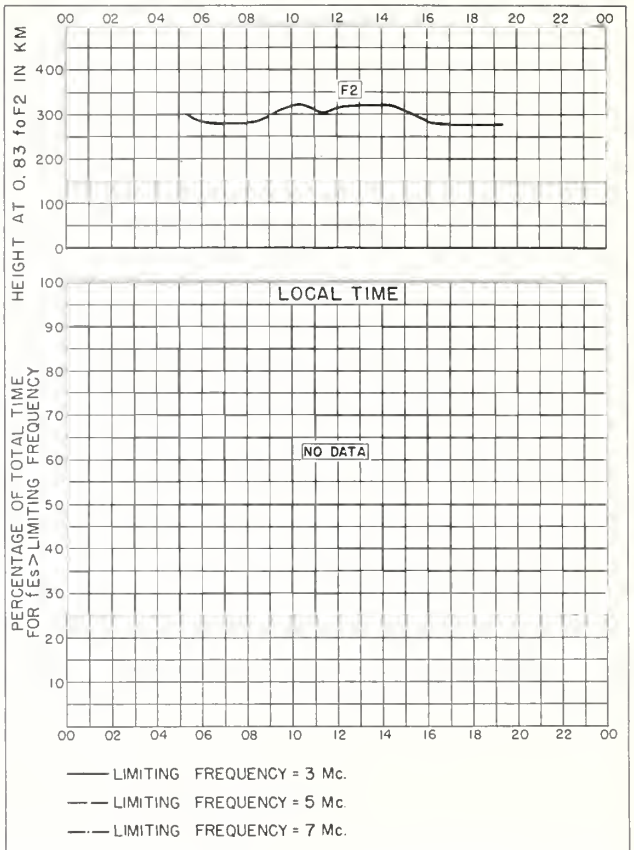

Fig. 134. DELHI, INDIA AUGUST 1953

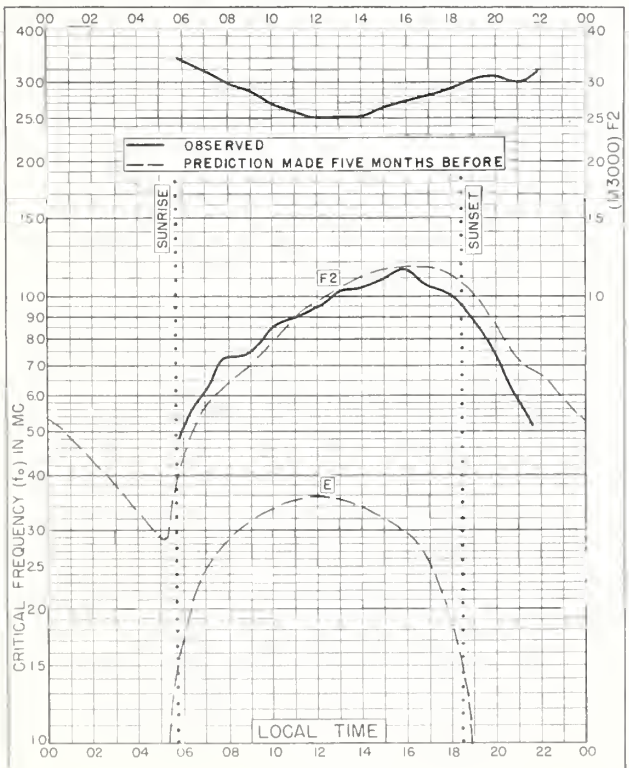

Fig. 135. BOMBAY, INDIA
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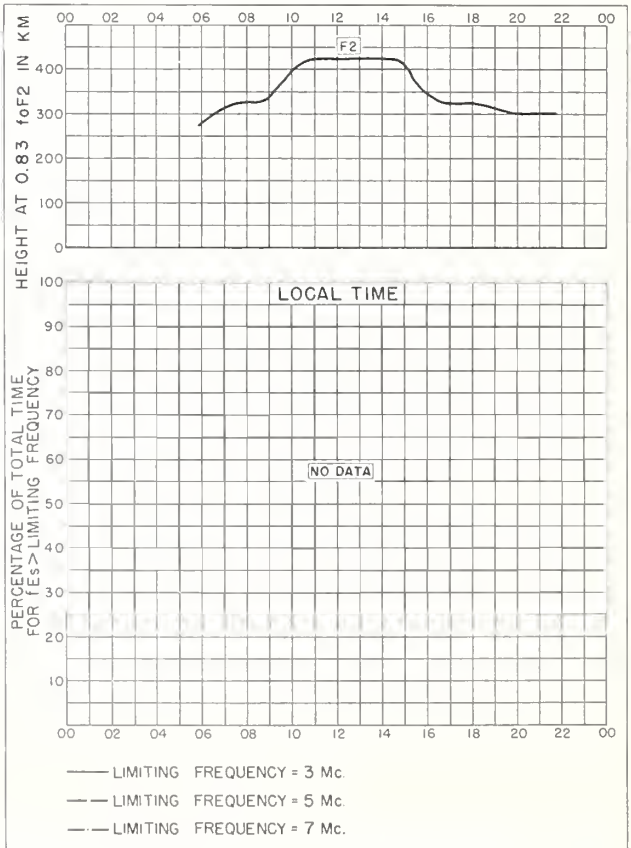
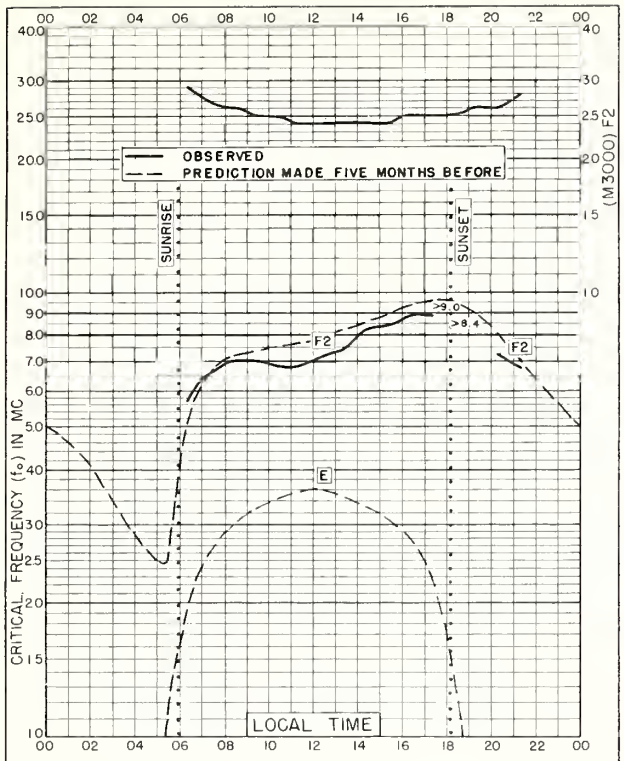


Fig. 136. BOMBAY, INDIA AUGUST 1953



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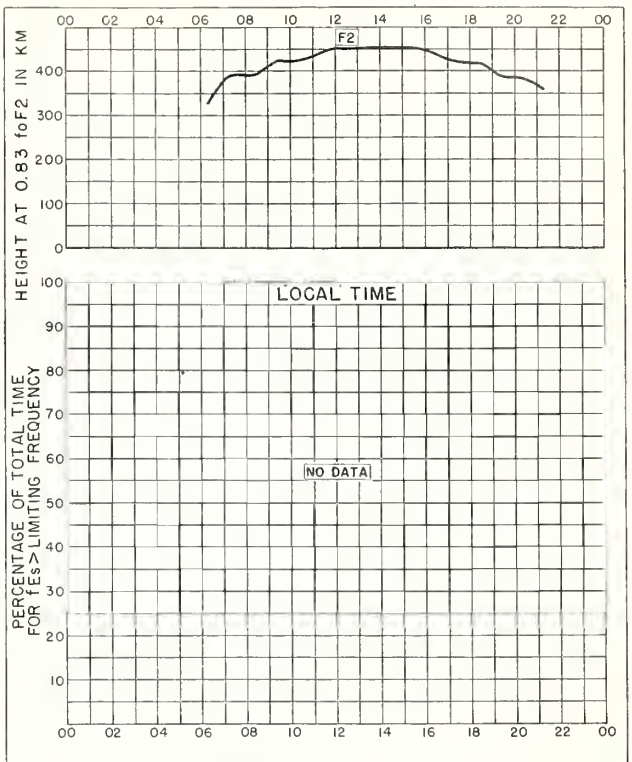

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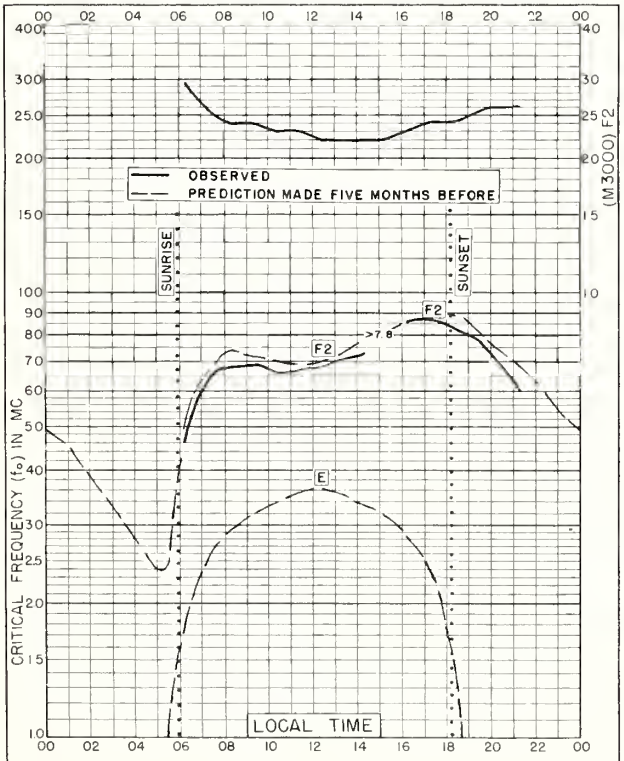

Fig. 139. TIRUCHY, INDIA
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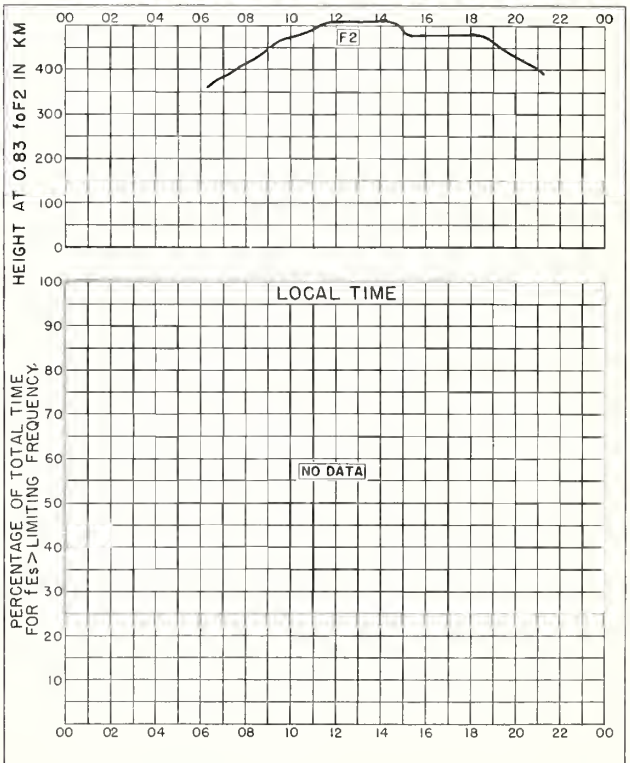

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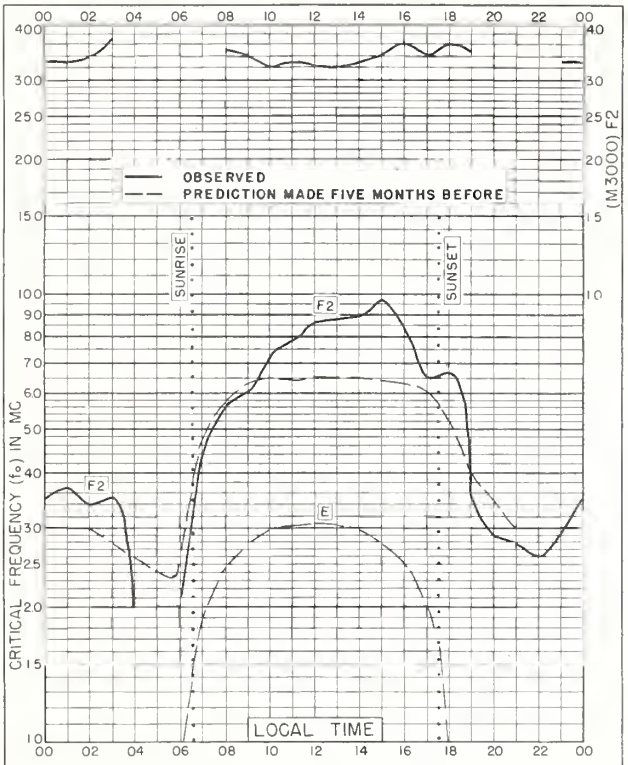

Fig. 141. SAO PAULO, BRAZIL
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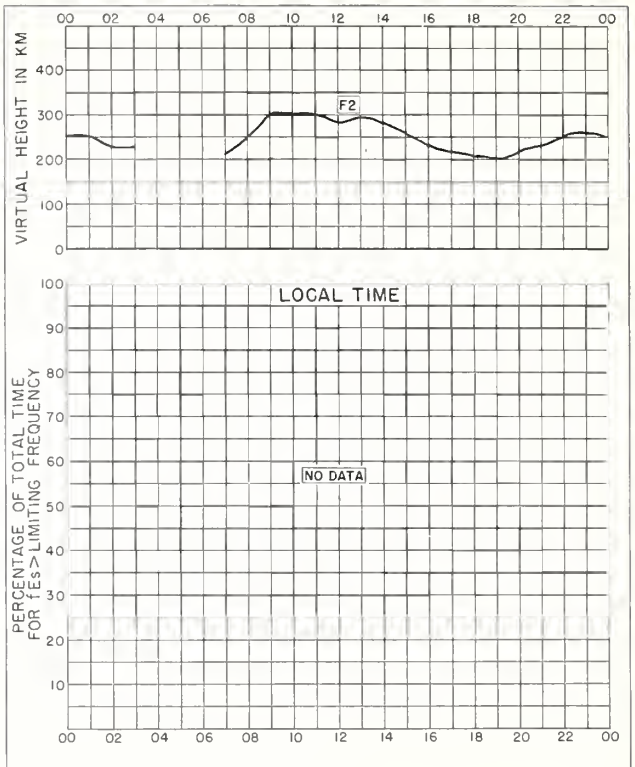

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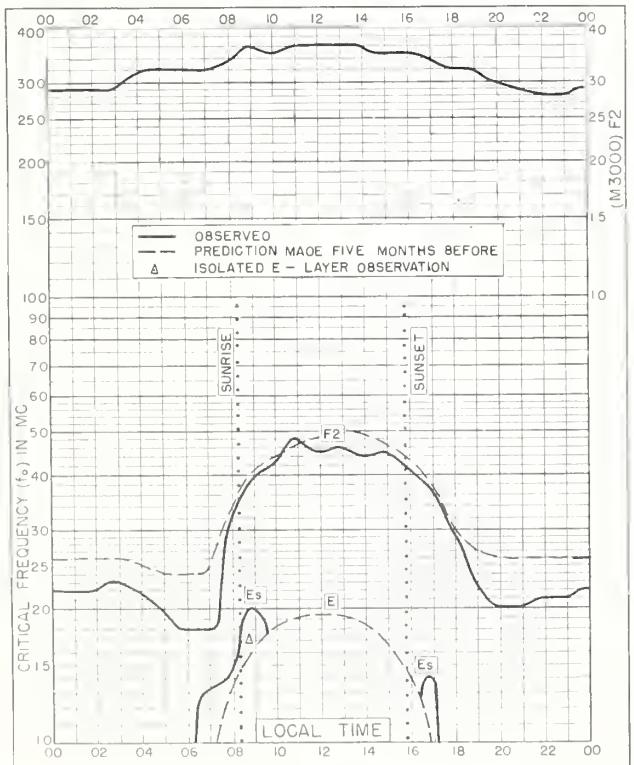

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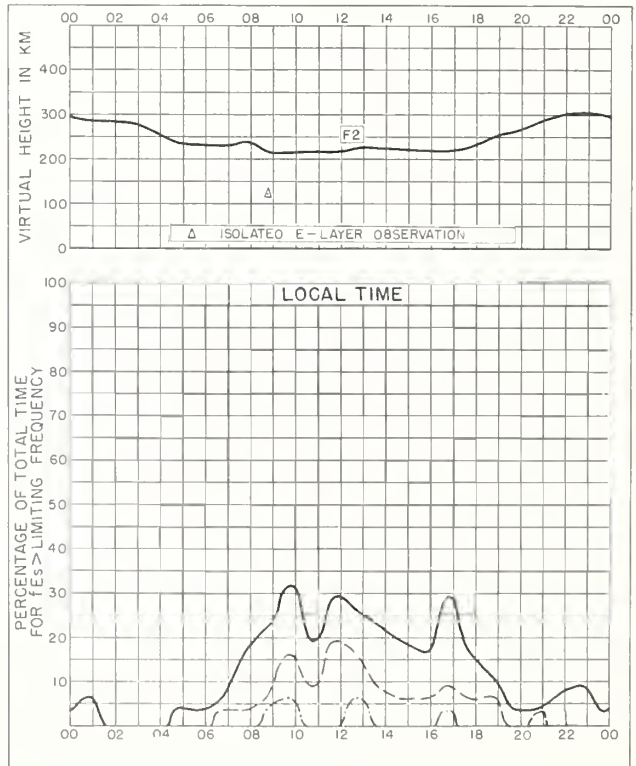

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CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

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NBS Circular 462. Ionospheric Radio Propagation.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

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